

THE JOURNAL OF

# THE INSTITUTION OF PRODUCTION ENGINEERS

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# The RolaVeyor

The RolaVeyor is manufactured in five different loading capacities covering a range of 30 lbs. to 560 lbs. per roller. Our photograph shows an installation of *Medium Type* at THE BELMOS COMPANY LTD



AND THEY SAY ...

"We installed The RolaVeyor to enable us to institute a progress arrangement for the manufacture of our flameproof switchgear which would work with speed and efficiency. The RolaVeyor has fulfilled these requirements perfectly, and has shown a saving in time of 20% and a decrease in costs of 10%."

WE CAN DO THE SAME FOR YOU

**J. Collis & Sons, Ltd.**

Write for details to: Dept. E.18, J. Collis & Sons, Ltd., Regent Square, Gray's Inn Road, London, W.C.1. Telephone TERminus 6141

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**CASTING  
OPERATION**



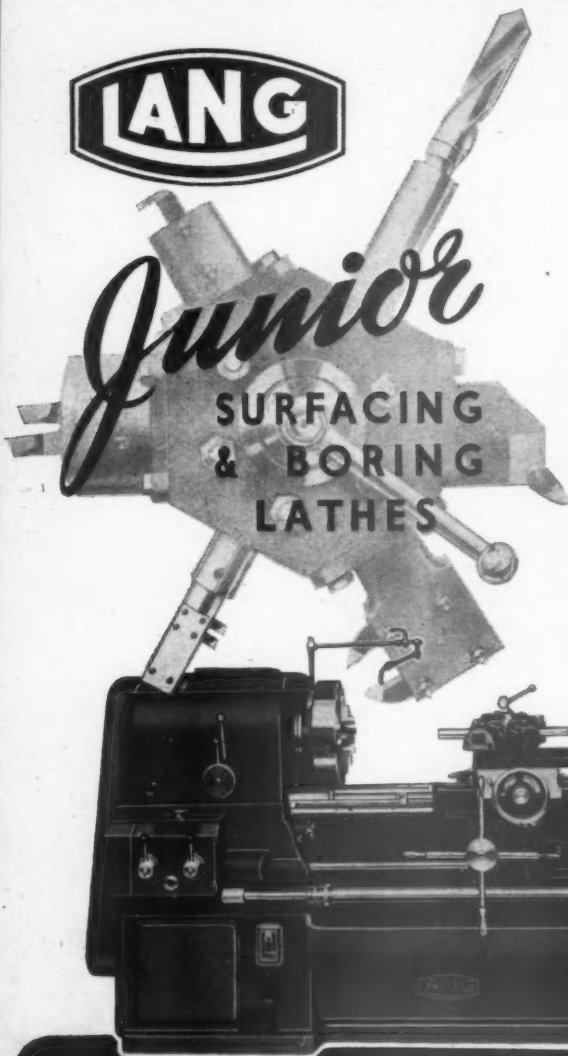
**FOR REGULARITY OF FINISH**

The illustration shows pressure die cast components for Servis Recorders. Our customer says, "We have been using your aluminium pressure castings for upwards of twenty years and we have found nothing to surpass them in regularity of finish. Our instruments are in use in all parts of the world and we have never yet had a single complaint regarding the parts you make for us. We have also come to appreciate and to rely on your Drawing Office and Design Staff, who have always been most helpful in the development of new types, and we look forward to continuing our co-operation with you for many years to come."

Extract from letter received from Servis Recorders, Gloucester.



**BIRMINGHAM ALUMINIUM CASTING (1903) CO LTD**  
**ARMID WORKS · SMETHWICK · BIRMINGHAM 40**



## **SURFACING & BORING LATHES**

**17 in. SWING  
'JUNIOR'  
SURFACING & BORING  
LATHE**

**FOR 'ONE OFF' OR BATCH  
PRODUCTION—AN IDEAL  
LATHE IN EITHER CASE**

**Twelve speeds; Hardened  
nickel-chrome gears; Patent  
preloaded spherical roller bear-  
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chuck; Protected bed, 200  
Brinell; Six feeds; Convenient  
controls; Simple tooling.**

LONDON OFFICE  
ASSOCIATED BRITISH MACHINE  
TOOL MAKERS LIMITED  
17 GROSVENOR GARDENS S.W.1

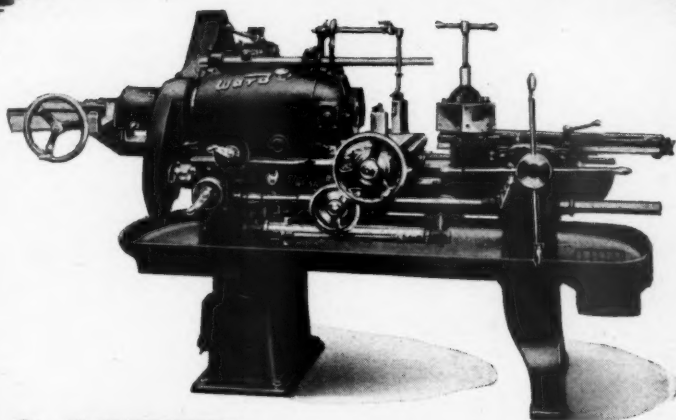
**JOHN LANG & SONS LTD.**

JOHNSTONE NEAR GLASGOW

Phone JOHNSTONE 400



*For Maximum Production*



## **Ward** N° 3A CAPSTAN LATHE

*Please write for  
particulars of our  
full range of  
Capstan & Turret  
Lathes*

Height of centres	...	6½ in.
Spindle hole dia.	...	1½ in.
Auto. chuck will take dia.	...	1½ in.
Swing over bed, max. dia.	...	13½ in.
Swing over cross-slide	...	7 in.

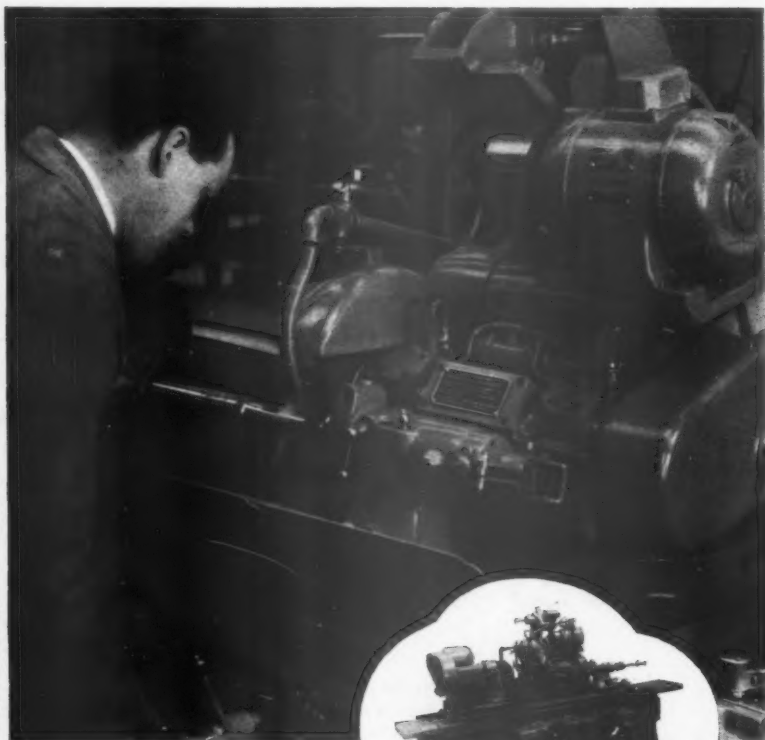
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Churchill machines have set a very high standard for Universal Grinding Machines due to their simplicity, combined with versatility and general efficiency in operation on a large variety of work.

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GENERAL LICENCE  
ISSUED**

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**THE FOLLOWING MAY BE  
OBTAINED WITHOUT IMPORT LICENCE**

**FROM SWITZERLAND :** (*Sole Agents in Great Britain, Burton, Griffiths and Company, Limited.*)

**MAAG**—Gear Generators, Capacity 2" to 16' diameter.

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**BERNINGHAUS**—Bar Coil Feed Automatic Forming Machines. Capacities : Round—  
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**GOCKEL**—Blade and Cutter Grinders, For Wood and Allied Trades.

**HEYLIGENSTAEDT**—Centre Lathes, Surfacing Lathes, Copying Lathes, Copying Attachments, Vertical Copying Mills.

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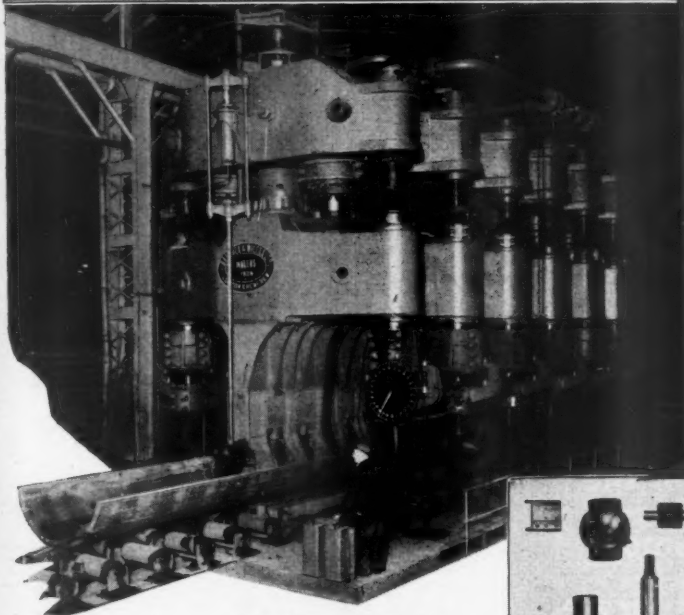
**LUDWISBURGER**—Fine Boring Machines and Equipment.

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**FESCOL****PROCESS OF  
ELECTRO-CHEMICAL  
DEPOSITION OF METALS**

*Reproduction by courtesy of  
Messrs. Babcock & Wilcox Ltd.*

**SIZE EXTREMES**

The 8,000-tons Bending Press, for which we "FESCOL"-ised 71 Rams, and the small parts inset, give an idea of the size extremes between which we can deposit, either to compensate for wear, or new, prior to service. Interested Executives are invited to write for fully descriptive List P.E.6.

**FESCOL LIMITED**

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microscopic  
control  
during  
grinding  
assures  
accuracy  
of the  
most  
intricate  
contours



Full  
descriptive  
catalogue  
available on  
request



**DIE GAUGE** for Stator Blade.  
Gauge Steel.  
Stock removal '015'.  
Accuracy '0003'.  
Grinding time 2½ hours



**FLAT FORM TOOL.**  
Tungsten Carbide Tip.  
From unshaped tip  
Accuracy '001'.  
Grinding time 80 mins.

**A. C. WICKMAN LTD.,**  
LONDON · BRISTOL · BIRMINGHAM · MANCHESTER

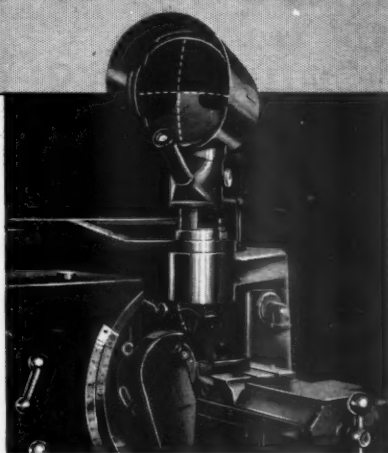


# Grinder

**T**HE Wickman Optical Profile Grinder is designed for profile grinding to fine limits, and is especially suitable for producing profile gauges, flat or circular form tools, etc., in any material including tungsten carbide.

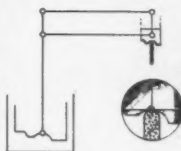
The machine employs a pencil and paper layout 50 times the size of the profile to be ground. The work is focussed under the microscope and the tracing point of the pantograph moved step by step along the drawn profile. At each step the reciprocating grinding wheel is fed manually into the work, and the exact progress of grinding can be followed in the field of the projection screen or microscope.

The machine will grind a form  $5\frac{1}{2}$ " in length and  $2\frac{1}{2}$ " in depth in a work-piece 2" thick. Circular form tools are produced on a separate circular grinding attachment comprising motor-driven live headstock and adjustable tailstock as a complete unit which can quickly be fitted to the machine.



The combined microscope and projection screen is seen in the above close-up of the upper head on which can be noted a vernier for setting the wheel to grind an angle, producing clearances, etc., with a maintained form.

The pantograph imparts a 50:1 reduction from the pencil layout to its final arm, in which is incorporated the combined microscope and projection screen.



**CIRCULAR FORM TOOL.**  
High Speed Steel.  
Stock removal '015".  
Accuracy '001"  
Grinding time  $1\frac{1}{2}$  hours.



**GAUGE for Blade Profile.**  
Gauge Steel.  
Stock removal '015".  
Accuracy '0005".  
Grinding time 2 hours.



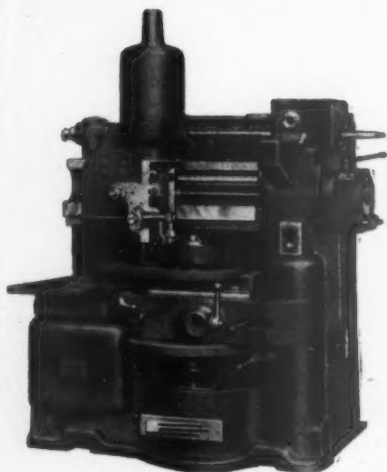
**FORM TOOL**  
Tungsten Carbide Tip.  
Stock removal '03".  
Accuracy '001".  
Grinding time  $5\frac{1}{2}$  hours.

D., COVENTRY, ENGLAND  
LEEDS · GLASGOW · NEWCASTLE · BELFAST

**Wickman**

65 W.M.G.

# We invite interested engineers to inspect our No. 3<sup>A</sup> MAXICUT heavy-duty gear shaper



## MAXICUT

PRODUCTION GEAR SHAPERS

Drummond Bros. Ltd., are always pleased to demonstrate their machine tools in their Factory at Guildford by appointment. They also invite engineers to write for copies of their catalogues describing production gear shapers and automatic multi-tool lathes.

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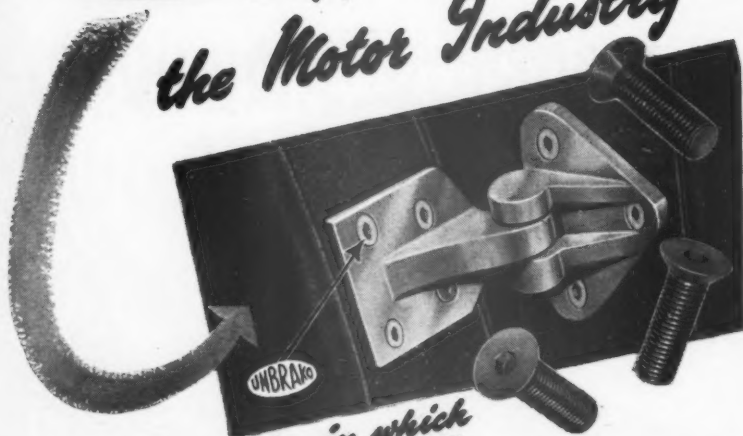
✦ 'HIGH TEST' is the trade mark of the Parsons Chain Company Ltd.

TURN OVER TO  
✦ **HIGH TEST**  
CHAIN



Also available in PARSONS STAINLESS STEEL and WHEEL CHAIN for acid conditions.

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*Other industries in which  
UNBRAKO SCREWS  
are standard specification*



AIRCRAFT



TEXTILES



MACHINE TOOLS



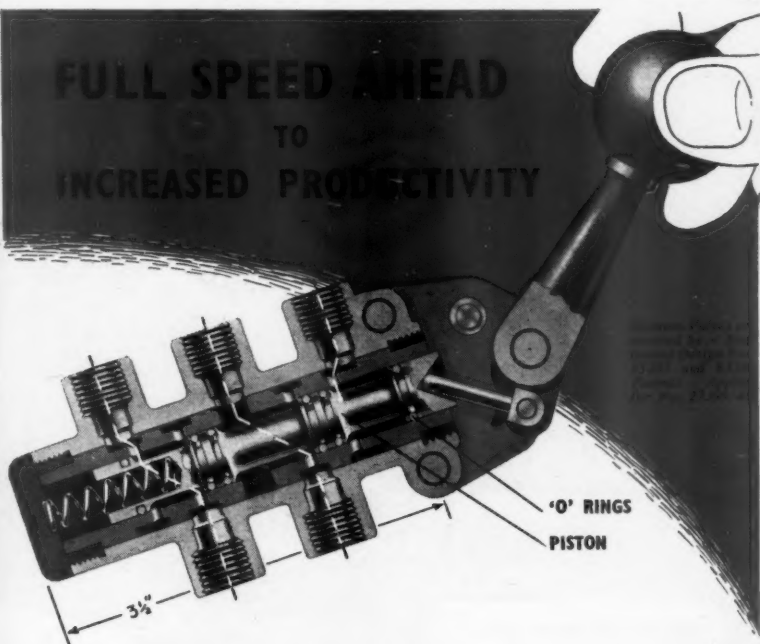
HAND TOOLS

"Unbrako" Precision High Tensile Socket Screws, products of the largest specialist manufacturers in Europe, are equal in quality to any socket screws manufactured in the world to-day. Such is the universal demand, that we are able to supply from stock an extensive range in all standard threads. Write for free samples for comparison with those you are already using.

Manufactured by the  
**UNBRAKO SOCKET SCREW CO., LTD., BURNABY ROAD, COVENTRY**

Stocked and Distributed by  
**CHARLES CHURCHILL & CO., LTD., COVENTRY ROAD, BIRMINGHAM, 25**

# FULL SPEED AHEAD TO INCREASED PRODUCTIVITY



Compressed air power solves many problems—

- ★ **SIMPLIFIES** Jigs, fixtures and machines
- ★ **SPEEDS** . . . Loading and unloading
- ★ **SHORTENS** . . . Idle motions
- ★ **SAVES** TIME - MANPOWER - MONEY

A Maxam four-way valve. Small and compact, simple in construction and action. Nothing to go wrong. Note particularly the plastic 'O' rings, which make a perfect seal and minimise wear.

Two-way, three-way and four-way valves are available for operation by hand, foot, cam or solenoid; also

remote control valves, both pressure and pilot operated.

With standard Maxam valves and cylinders manual machines can be converted to automatic power operation; processes involving large thrusts and complex sequences can be designed to operate at the flick of a lever.

*Let us send you full information.*

VALVES AND CYLINDERS

# MAXAM

AIR EQUIPMENT

THE MODERN WAY TO FASTER PRODUCTION  
CLIMAX ROCK DRILL & ENGINEERING WORKS LTD. 4 Broad Street Place, London, E.C.2



**Conditioned air**  
**keeps your staff healthier**  
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**and your products cleaner**

*To achieve this may call for Heating, Ventilating, De-humidifying,  
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# MACHINING TIME CUT *by* 3 $\frac{1}{2}$ HRS.



report



**Sonnerdale**  
Ltd.  
of SYDNEY, AUSTRALIA

a large manufacturer specialising  
in Gearing and Reduction Boxes

This impressive example of time saved on a difficult production run reported by Messrs. Sonnerdale Ltd of Stanmore, N.S.W., Australia, specialist machinists, is typical of results obtained with the "Matrix" No. 46 Thread Grinder, an outstanding product of Coventry Gauge unrivalled experience in machine tool design. The complete range of "Matrix" Products includes special purpose Machine Tools, Measuring Instruments and Gauges of superlative quality in constant demand wherever the wisdom of using the best is appreciated.

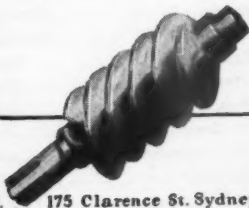
**Coventry Gauge**  
& TOOL CO. LTD. COVENTRY  
ENGLAND

## in the MANUFACTURE OF THIS WORM

THE ability to slice 3½ hours off a 4 hour job is the sort of saving you need, leading to a rapid return of capital outlay. Why not put your production problems up to Coventry Gauge?

### PRODUCTION DATA

No. of Starts	-	-	-	Four L.H.
Pitch	-	-	-	1.15625"
Lead	-	-	-	4.625"
Helix Angle	-	-	-	33° 22'
Addendum	-	-	-	.343"
Depth	-	-	-	.692"
Normal Thickness	-	-	-	.524"
Outside Dia.	-	-	-	2.900"
Pitch Dia.	-	-	-	2.213"
Root Dia.	-	-	-	1.516"
Overall Length of Wormshaft	-	-	-	12½"
Overall Length of Worm	-	-	-	5½"
Previous Production Time	-	-	-	4 hours
Revised Production Time	-	-	-	35 mins
Saving of 3½ hours.				



Sole Agents. WILLIAM ADAMS & Company Ltd. 175 Clarence St. Sydney, N.S.W.

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<b>Halifax</b>	. . . .	E. G. Harrison, 26, Park Road West, Huddersfield.
<b>Liverpool</b>	. . . .	E. A. Hewitt, 4, Olive Mount, Liverpool, 15.
<b>London</b>	. . . .	R. T. Mustard, 47, King's Road, Woodham, Weybridge Surrey.
<b>Luton</b>	. . . .	C. S. Brewer, 144, Hart Lane, Luton, Beds.
<b>Manchester</b>	. . . .	G. H. Armes, 14, Fairmile Drive, East Didsbury, Manchester, 20.
<b>North Eastern</b>	. . .	G. D. Robson, 86, Dryden Road, Low Fell, Gateshead.
<b>Wolverhampton</b>	. .	R. W. Tomkys, 30, Church Road, Bradmore, Wolverhampton, Staffs.
<b>Yorkshire</b>	. . .	J. Freel, 27, Roundhay Grove, Leeds, 8.

THE JOURNAL OF

# THE INSTITUTION OF PRODUCTION ENGINEERS

Vol. 29, No. 12, December 1950



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*The Institution of Production Engineers does not accept responsibility for any statements made or opinions expressed in any papers published in the Journal of the Institution.*

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## INSTITUTION NOTES

*December 1950*

### **INTERNATIONAL MANAGEMENT CONGRESS**

The Ninth International Management Congress will be held in Brussels from 5th to 11th July, 1951, when twelve distinct subjects will be discussed. Each subject will be prepared by a country associated with the International Committee of Scientific Management, the subjects for Britain being "Structure of Large Enterprises" and "Recent Developments in Quality Control".

The Institution of Production Engineers wishes to send an official delegation. Any members who will be attending the Congress, and who would like to be regarded as representatives of the Institution, are asked to get in touch with the Acting Secretary.

This arrangement follows the same lines as at the Eighth International Management Congress, held in Stockholm in 1947, when a number of Institution members formed themselves into a delegation led by Mr. Walter Puckey. Mr. Puckey, Chairman of Council, will be attending the Brussels Congress, and will again act as leader of a delegation if one can be organised.

Several Members of Council have already intimated their intention of attending the Congress, and have expressed their willingness to join a party representing the Institution.

### **WORK MEASUREMENT RESEARCH SURVEY**

Readers will be aware of the national survey of time study rating practice recently carried out by the Work Measurement Research Unit of the University of Birmingham, under the leadership of Professor T. U. Matthew, which was commented on in the October issue of this Journal.

Mr. D. J. Desmond, Research Fellow, and Mr. C. J. Anson, Research Scholar of the University of Birmingham, who formed the visiting Research Team, met with an enthusiastic reception at all the centres visited. The demand to participate was so great that it was found necessary to arrange an additional meeting in Liverpool after the Survey had started, and at one meeting in the Manchester area the attendance reached 160. Particular interest was also aroused in the new method of time study analysis which was used during the Survey.

Approximately 200 firms were represented in the Survey, during which 16 meetings were held in 12 different centres. The number of those taking part far exceeded expectations, and over 700 special rating forms were completed. A few of those participating

were not time study engineers. A number of members of the Institute of Cost and Works Accountants and the Institution of Production Engineers attended the meetings, and took part in the experiment, and it is proposed to make a separate analysis of the results obtained by these "non-professionals" for comparison with those trained in time study.

The analysis of the many thousands of observations collected during the Survey will take several months to complete, but it is hoped that a report will be issued during the late Summer of 1951.

**WORKSHOP TECHNOLOGY** A week-end course for full and part-time teachers and intending teachers of workshop technology and allied subjects will be held on Friday and Saturday, 5th and 6th January, 1951, at the Polytechnic, Regent Street, London, W.1.

The lectures will be as follows :

*Friday, 5th January*

"The Place of Engineering Workshop Technology in Engineering Courses" by F. H. Reid, Esq., B.Sc., M.I.Mech.E., M.I.Mar.E., Principal of S.E. London Technical College.

*Saturday, 6th January*

"The Principles of Teaching—(a) Preparation, (b) Presentation" by C. Jameson, Esq., B.Sc., M.Ed., Director of the Training College for Technical Teachers at the North Western Polytechnic.

"Workshop Technology in Craft Courses" by R. Helliwell, Esq., A.M.I.Mech.E., of Northampton Polytechnic.

"Workshop Technology in Professional Courses" by T. B. Worth, Esq., Education Officer to the Institution of Production Engineers. (The Chairman for this lecture will be Mr. W. E. Park, B.Sc., A.M.I.Mech.E., M.I.Prod.E., Chairman of the Institution's Education Committee.)

All lectures will be followed by group discussions.

The fee for the course is One Guinea, which includes coffee, lunch and tea on Saturday, 6th January. Members of the Institution will be welcome at the opening lecture at 7 o'clock on the evening of Friday, 5th January.

**COURSES IN PRODUCTION ENGINEERING**

In addition to the Colleges mentioned in the September, 1950, issue of the Journal, courses leading to the award of Higher National Certificates in Production Engineering are now available at the Technical College, Accrington, Lancashire.

**NEWS OF MEMBERS**

Mr. E. H. Brown, Associate Member, is now Joint Managing Director of A. C. Brown & Co., Ltd., Plymouth.

INSTITUTION NOTES

Mr. M. E. Chivers, Associate Member, is at present Technical Adviser to the Kenyon-Platt Group and William Kenyon & Sons, Ltd., of Cheshire, France, Holland and U.S.A.

Mr. H. B. Dauncey, Member and past President of the Western Section, has been appointed a Director of T. H. & J. Daniels, Ltd., Stroud. Mr. Dauncey has been in the Company's service since 1907 and has been Works Manager for the past 30 years.

Mr. F. H. Flood, Associate, is now Works Manager of John Fowler & Co. (Leeds), Ltd.

Mr. J. Henry, Member, is now General Manager of Francis & Graham Ltd., Durban, Natal.

Mr. L. R. Houghton, Intermediate Associate Member, was recently appointed Lecturer responsible for Foremanship Courses in the School of Commerce, College of Technology, Leicester.

Mr. S. K. Mukherjee, Associate Member, has been appointed an Inspection Engineer of the Calcutta Port Commissioners.

Mr. A. D. Prakes, Associate Member, is now Works Manager at R. W. Reeves, Ltd., Ellesmere Engineering Works, Leigh, Lancs.

Mr. M. Samuely, Associate Member, has been accepted as a Senior Member of the American Society of Tool Engineers. Mr. Samuely is a lecturer on Jig and Tool Design at the Westdale Technical Institution, Hamilton, Ontario.

Mr. W. F. Sharpe, Associate Member, is now Assistant to the General Manager of the State Engineering Works, Fremantle, Western Australia.

Mr. S. E. Willett, Member, General Manager of Clayton-Dewandre, Ltd., Titanic Works, Lincoln, has been appointed to the Board. Mr. Willett is Vice-President of the Lincoln Section.

Mr. H. W. Barnes, Graduate, is now Resident Consultant in Industrial Management with Industrial Consultants, London.

Mr. L. J. Saunders, Graduate, is now Senior Production Engineer with the Glacier Metal Co., Ltd., Alperton, Middlesex.

**Mr. C. H. T. WILLIAMS** The Institution is pleased to note that a photograph and biography of Mr. C. H. T. Williams, J.P., Member, appears in the October Journal of the Iron and Steel Institute.

Mr. Williams, who is Joint Managing Director of the Park Gate Iron and Steel Company, Ltd., is Vice-President of the Sheffield Section of the Institution of Production Engineers, and is a member of the Special Committee on Re-organisation of the Institution.

**GRADUATE'S SUCCESS** The Institution offers warm congratulations to Mr. Brian Kent, Graduate, on winning the First Travelling Scholarship for Craft Apprentices, awarded by the Ministry of Supply.

**OBITUARY** The Institution deeply regrets to record the death of Mr. D. B. Nivison, Member, of the Western Section.

**BOOKS RECEIVED** "*Presentation of Information to Management.*" Institute of Cost and Works Accountants, London. Price 15/- net.

The above booklet is one worthy of commendation inasmuch as the contents present to the Engineering profession means by which information, so necessary for controlling quality, price and delivery dates, can be made readily available.

This book should find a place in the library of the Production Engineer. T.P.

*Symposium on Aluminium in Road Transport. Aluminium Development Association, London.*

"*Air Compressors—Control and Installation*" by P. C. Bevis. Sir Isaac Pitman & Sons, Ltd., London. Price 20/- net.

**THE LIBRARY** The Library will be open between 10 a.m. and 5.30 p.m. on Mondays, Tuesdays, Thursdays and Fridays; between 10 a.m. and 8 p.m. on Wednesdays; and between 10 a.m. and 1 p.m. on the first Saturday of every month.

### SECTION MEETINGS

The following meetings have been arranged to take place in January, 1951. Where full details are not given, these have not been received at the time of going to press.

#### January

- 2nd **Reading Sub-Section.** A lecture on "Nuclear Physics" will be given by Dr. K. Mendelssohn, at the Great Western Hotel, Reading, at 7-15 p.m.
- 3rd **Wolverhampton Section.** A lecture on "Some New Materials and Their Applications" will be given by R. F. Archer, Esq., at the West Midland Gas Board Demonstration Room, Darlington Street, Wolverhampton, at 7-00 p.m.
- 3rd **Nottingham Section.** There will be a Joint Meeting with the Institute of Cost & Works Accountants, to debate on a motion "That monetary incentives do not increase production, but merely become a wage increase," at the Welbeck Hotel, Milton Street, at 7-00 p.m.
- 8th **Yorkshire Section.** A lecture on "Metallurgy and its Importance to the Production Engineer", will be given by Dr. A. R. E. Singer, at the Hotel Metropole, King Street, Leeds 1, at 7-00 p.m.
- 8th **Liverpool Graduate Section.** A lecture on "Training Within Industry", will be given by E. V. Tilley, Esq., (Supervising Training Officer, B.I.C.C.), at the Exchange Hotel, Tithebarn Street, Liverpool, at 7-45 p.m.



- 9th **Coventry Graduate Section.** A lecture on "Welding and Fabrication Processes" will be given by W. N. Aspinall, Esq., Grad.I.Prod.E., at Hare and Squirrel Hotel, Cow Lane, Coventry, at 7-15 p.m.
- 9th **Birmingham Graduate Section.** A lecture on "The Technique of Industrial Investigation" will be given by Lewis C. Ord, Esq., at the James Watt Memorial Institute, Great Charles Street, Birmingham, 3, at 7-00 p.m.
- 10th **South Essex Sub-Section.** A lecture on "Personnel Matters in Industry" will be given by H. J. Marsh, Esq., in the Reading Room, Conservative Club, Ilford, at 7-30 p.m.
- 10th **Preston Section.** A lecture on "Manufacture of Steel" will be given by a representative of Thos. Firth & John Brown Ltd., at the Harris Institute, Corporation Street, Preston, at 7-15 p.m.
- 10th **London Graduate Section.** A lecture on "Management Technique With Special Reference to the Use of Statistical Methods" will be given by H. Gurvick, Esq., G.I.Mech.E., Grad.I.Prod.E., at 36, Portman Square, London, W.1, at 7-15 p.m.
- 10th **Liverpool Section.** A lecture on "Application of Mechanised Systems to Production" will be given by R. Bailey, Esq., at Radiant House, Bold Street, Liverpool, at 7-15 p.m.
- 10th **Northern Ireland Section.** A lecture on "Gas Turbines for Land Use" will be given by F. E. Baumann, Esq., at the Municipal College of Technology, Belfast, at 7-30 p.m.
- 11th **Southern Section.** A lecture on "Foremanship" will be given by A. P. Young, Esq., O.B.E., at the Polygon Hotel, Southampton, at 7-00 p.m.
- 12th **West Wales Sub-Section.** A lecture on "Costing as an Aid to Management" will be given by H. H. Norcross, Esq., A.I.Prod.E., F.C.W.A., F.I.I.A., at the Central Library, Alexandra Road, Swansea, at 7-30 p.m.
- 13th **Birmingham Graduate Section.** There will be a works visit to Chance Bros., Ltd., Glassworks, Smethwick 40, Birmingham, at 10-00 a.m.
- 13th **Yorkshire Graduate Section.** A lecture on "Dynamic Balancing Machines" will be given by A. Binns, Esq., at the Great Northern Station Hotel, Leeds 1, at 2-30 p.m.
- 15th **Sheffield Section.** A lecture on "A Crane Builder's Outlook on the Design of Electric Overhead Cranes" will be given by John Baker, Esq., at the Royal Victoria Hotel, Sheffield, at 6-30 p.m.
- 15th **Halifax Section.** A lecture on "Diamonds in Industry" will be given by Johan J. Smit, Esq., Snr., at the White Swan Hotel, Halifax, at 7-15 p.m., preceded by a visit to Smit-Asquith Diamond Cutting Factories Ltd., Halifax.
- 15th **Derby Sub-Section.** A lecture on "Tungsten Carbide" will be given by B. E. Berry, Esq., B.Sc., M.A.(Cantab.), at the School of Art, Green Lane, Derby, at 7-00 p.m. (Illustrated by a sound colour film).
- 16th **Western Section.** A lecture on "Electronics in Industry" will be given by L. G. Ward, Esq., B.Sc., at the Grand Hotel, Broad Street, Bristol, at 7-15 p.m.
- 16th **Coventry Section.** A lecture on "Materials Handling" will be given by W. M. Hiorns, Esq., A.M.I.Prod.E., in the Greyfriars Rooms, The Geisha Cafe, Hertford Street, Coventry, at 7-15 p.m.

**January—cont.**

- 16th **Wolverhampton Graduate Section.** There will be a discussion on "The Measurement of Productivity", under the direction of Professor T. U. Matthew, M.Sc., M.I.Prod.E., N. A. Dudley, Esq., B.Sc.(Econ.), M.I.Prod.E., D. J. Desmond, Esq., M.Sc., M.I.E.E., W. Rodgers, Esq., at The West Midland Gas Board Demonstration Room, Darlington Street, Wolverhampton, at 7-00 p.m.
- 17th **Birmingham Section.** A lecture on "The Machine Tool Industry" will be given by W. J. Morgan, Esq., M.B.E., A.M.I.Mech.E., Secretary of Machine Tool Trade Association, at the James Watt Memorial Institute, Great Charles Street, Birmingham 3, at 7-00 p.m.
- 17th **Edinburgh Section.** A lecture on "Some New Materials and their Applications" will be given by R. F. Archer, Esq., at the North British Station Hotel, Edinburgh, at 7-30 p.m.
- 18th **Leicester Section.** A lecture on "Production Methods in the Cycle Industry" will be given by T. A. Yapp, Esq., M.B.E., M.Inst.B.E., M.Inst.W.M., in Room 104, Leicester College of Art and Technology, The Newarke, Leicester, at 7-00 p.m.
- 18th **Glasgow Section.** A lecture on "Fine Finishes by Machining Techniques" will be given by P. Spear, Esq., B.Eng., Grad.I.Prod.E., at the Institution of Engineers and Shipbuilders, 39, Elmbank Crescent, Glasgow, at 7-30 p.m.
- 18th **London Section.** A lecture on "Sheet and Steel Plate Manufacture" will be given by Dr. P. M. Macnair, at the Assembly Hall, Royal Empire Society, Northumberland Avenue, London, W.C.2. (Craven Street Entrance, Charing Cross), at 7-00 p.m. (Illustrated by a film).
- 19th **North Eastern Graduate Section.** A lecture on "The Production Engineer and Management" will be given by R. F. Loeb, Esq., Grad.I.Prod.E., at the Neville Hall Mining Institution, Westgate Road, Newcastle-upon-Tyne, 1, at 7-00 p.m.
- 19th **Eastern Counties Section.** A lecture on "Product Packaging on the Production Line" will be given by J. E. Evan Cook, Esq., J.P., at the Ipswich Public Library, (Old Foundry Road Entrance), at 7-30 p.m.
- 19th **Manchester Graduate Section.** A lecture on "Tracer Controlled Machine Tools" will be given by P. K. Eisner, Esq., G.I.Mech.E., Grad.I.Prod.E., in the Reynolds Hall, (Room C.3), College of Technology, Sackville Street, Manchester, at 7-15 p.m.
- 22nd **Manchester Section.** A lecture on "Jet Engines" will be given by E. E. Storm, Esq., at the College of Technology, Sackville Street, Manchester, at 7-15 p.m.
- 23rd **Leicester Section.** A lecture on "Production and Cost Control in the British and American Hosiery Industries" will be given by W. W. Noakes, Esq., A.C.A., at the Bell Hotel, Humberstone Gate, Leicester, at 6-30 p.m. for 7-00 p.m. Arranged by the Institute of Cost & Works Accountants.
- 25th **South Wales & Monmouthshire Section.** There will be a sound colour film entitled "Hard Metal", followed by a lecture on "Cemented Tungsten Carbide and its Uses" at the South Wales Institute of Engineers, Park Place, Cardiff, at 6-45 p.m.
- 25th **London Graduate Section.** There will be a works visit to Philips Electrical Limited, New Road, Mitcham, Surrey, at 2-30 p.m.

**January—cont.**

- 27th **North Eastern Graduate Section.** There will be a works visit to Vickers-Armstrongs Naval Yard, Walker, at 10-00 a.m.
- 27th **Yorkshire Graduate Section.** There will be a works visit to John Stirk & Sons, Ltd., Ovenden Road, Halifax, in the afternoon.
- 29th **North Eastern Section.** A lecture on "Case Discussion on Production Problems" will be given by A. F. Lovatt, Esq., at the Neville Hall Mining Institution, Westgate Road, Newcastle-upon-Tyne, 1, at 7-00 p.m.
- 30th **Luton.** A lecture on "An Assessment of Production Engineering Training" will be given by T. B. Worth, Esq., M.I.Mech.E., A.M.I.E.E., M.I.Prod.E., in the Small Assembly Room, Town Hall, Luton, at 7-15 p.m.
- 31st **Lincoln Section.** A lecture on "The Use of Air in Industry" will be given by C. M. P. Willcox, Esq., at Staff Canteen, Ruston & Hornsby Ltd., Boultham Works, Lincoln, at 7-00 p.m.
- 31st **Shrewsbury Sub-Section.** A lecture on "Industrial Maintenance of Machines" will be given by R. M. Buckle, Esq., M.I.Prod.E., at the Technical College, Shrewsbury, at 7-30 p.m.

**CHANGE OF ADDRESS** It would be of great assistance to Head Office if members would ensure that the business addresses contained in their records were up-to-date, and would notify Head Office as soon as possible of any change of appointment.

**IMPORTANT** In order that the Journal may be despatched on time, it is essential that copy should reach the Head Office of the Institution not later than 40 days prior to the date of issue, which is the first of each month.

**ISSUE OF JOURNAL** Owing to the fact that output has to be adjusted to meet requirements, and in order to avoid carrying heavy stocks, it has been decided that the Journal will only be issued to new Members from the date they join the Institution.

## MATERIALS HANDLING

Members will be aware of the active steps which have been taken by the Institution during the last few months to increase interest and focus the attention of its members on the possibilities of increasing productivity through better materials handling. The very successful Regional Conferences held last May at both Coventry and Bristol have been fully reported in the Journal and the Technical Press. The Institution had a Stand at the Mechanical Handling Exhibition, Olympia, in June ; and many visitors and members attending the Exhibition made use of the facilities provided. This new venture attracted considerable interest and helped to link the Institution firmly in the public mind with the subject of materials handling.

An up-to-date bibliography of current available literature on handling, published both in this country and in the U.S.A., together with references to numerous papers and reports and a list of films on the subject, was prepared and distributed to visitors at the exhibition ; supplies have also been sent to all Section Hon. Secretaries, and further copies are available on request.

The Materials Handling Sub-Committee was set up in April 1950 under the Chairmanship of Mr. W. J. Webb, A.M.I.Mech.E., A.M.I.I.A. Other members serving on this Sub-Committee are Mr. A. J. Bullivant, Mr. F. T. Dean, Mr. W. J. Dimmock and Mr. J. B. Robertson. The Committee's broad terms of reference are as follows :—

- (a) To devise ways and means of stimulating interest throughout the Institution in the subject of Materials Handling as a tool of production ;
- (b) To draw up a programme of investigation which the Institution might tackle, with a view to producing a Report on Materials Handling in Industry.

The Committee are keenly alive to the fact that part of their task is to educate the Institution's membership to be " materials handling conscious ". The great interest in handling methods found at all levels of industry in America, and the remarkable effect of this attitude on productivity, has been a striking common feature of all the Productivity Teams' Reports published by the Anglo-American Council on Productivity.

The Sub-Committee strongly recommend that members of the Institution should persuade their companies to place copies of the " Materials Handling in Industry " Report in the hands of all foremen and supervisory staff. The Report, which is well produced,

clear and readable, should prove a most valuable means of stimulating interest at every level in the factory, and bringing to light those hidden costs which better handling can so effectively reduce. Copies of the Report are obtainable from Institution Headquarters, price 2/6 post free.

The Committee have further asked all Sections of the Institution to consider the various recommendations put forward by the Materials Handling Team, and submit suggestions to Council as to how these recommendations can be implemented. The Institution has already taken the lead in bringing into effect the recommendation that liaison with the Handling Division of the American Society of Mechanical Engineers should be established by professional bodies in this country; an approach has been made to A.S.M.E. suggesting an exchange of views and literature, and possibly an interchange of guest lecturers.

The Committee particularly wish to enlist the aid of members who can supply case histories, quoting direct and indirect savings resulting from recent modifications to handling methods in their own companies. Such information should be sent to the Acting Secretary at Institution Headquarters, and will be of considerable help to the work of the Committee.

A number of Sections are now setting up working groups on materials handling, and have been asked to collect case studies as a basis for the Report on Materials Handling in British Industry which will eventually be drawn up. The Birmingham Section Group are studying Inter-process Transfer Mechanisms, whilst the London Graduate Section have one study group working on stillages. A Sub-Committee has recently been formed by the Calcutta Section to study the scope for improved materials handling in that country, and to investigate current practice.

A list has been prepared and circulated to all Section Hon. Secretaries, of a number of qualified individuals who would be willing, if invited, to read papers on various aspects of materials handling at Section Meetings.

## OPENING OF THE HAZLETON MEMORIAL LIBRARY

THE official opening of the Hazleton Memorial Library by the President of the Institution, Major-General K. C. Appleyard, C.B.E., which took place on Thursday evening, 26th October, 1950, at 36, Portman Square, W.1, was attended by over eighty members and friends. Mr. A. P. Oppenheimer, Chairman of the London Graduate Section, was in the chair.

In his address of welcome Mr. William Core, President of the London Section, expressed his pleasure that so many members and friends had gathered together to pay this tribute to the late Richard Hazleton. He extended a special welcome to Mr. Hazleton's sisters, Miss Rosemary Hazleton and Mrs. Shaw, to Miss Shaw and Mr. Richard Burkett, and to close friends including Mrs. Keating, Mr. N. Baliol-Scott, and Mr. C. H. Appleby, the Institution's auditor, and referred particularly to Mr. A. W. Mackrell, a member of the Institution, who had generously made and presented a model bust of Richard Hazleton.

Mr. Core had hoped also to welcome Mr. John Dulanty, until recently the Eireann Ambassador in London, but unfortunately His Excellency had had to enter a nursing home. He had, however, sent a message in which he expressed his sincere regret that he was unable to be present. He had had the privilege and pleasure of Richard Hazleton's friendship for many years, and he felt that Council had, by opening this Library, taken a step which was not only of inestimable value to members of the Institution, but which was fully in accord with the aims and inclinations expressed by Richard Hazleton during his lifetime.

Mr. Core also said he was glad to see such a good representation of friends from the technical press.

In closing, Mr. Core referred to his own friendship with Richard Hazleton, which he would regard always as one of the outstanding relationships which he had been privileged to make.

The Chairman offered sincere apologies on behalf of Mr. Walter C. Puckey, Chairman of Council, who was suffering from an infection of the throat and had been ordered to rest his voice. In his absence, his address on "The Purpose of Our Library" would be read by Mr. H. G. Shakeshaft, Vice-Chairman of the Library Committee.

## THE PURPOSE OF OUR LIBRARY

Speaking as one who has also some very modest claims to authorship, if not authority, I have realised how little it is necessary to know in order to talk, but how much more it is necessary to know if one wishes to write.

One of to-day's problems is the complexity of life, and this very complexity allows us little time, and even more unfortunate, a growing disinclination to give considered thought to any one subject. Most of the contacts we make are becoming superficial and lack real depth of appreciation or understanding. Our ears are surfeited by speeches and by the radio, our eyes are surfeited by television, by large headlines and small tabloids.

One of the great values of reading is that it encourages a reasonable state of repose, which must be present if considered thought is to be given to a subject. Once in that state of repose we are encouraged to concentrate more fully upon the job in hand, and the words and meanings of the words sink to greater depth.

I have just said that it is only when you begin to write about something that you realise how little you know of it ; how worthwhile it is even to find out that information, disturbing though it might be. It might indeed make you hesitate to commit yourself further to writing unless you are able finally to prepare a worthwhile message.

A writer has, fortunately for himself and his public, another barrier, in the form of the publisher, which he has to overcome, and one is therefore led to the conclusion that although there may be bad books, although there may be many bad thoughts committed to writing, the chances are that their number has been very much reduced because of the difficulties of getting finally into print.

So we prove very easily how desirable it is to encourage both reading and writing, and from this we are led to the conclusion that it is also imperative to bring together those who can write and those who can read. A logical meeting place is a Library, and this ability to provide common ground is perhaps the main purpose of a Library.

There is another very good reason for the existence of a Library. It is desirable for us all at times to realise fully the vast storehouse of knowledge that is at our disposal ; a storehouse that has been filled over many centuries by gifted people writing on a range of subjects as wide as the world itself. The realisation that this storehouse is at our disposal encourages, I believe, a sense of stability in us. It provides the foundation on which we attempt to continue building our modern edifice. It encourages, I believe, an essential humility, particularly among those of us who feel that only we



can provide the answers, and that we have little to learn from the past.

It was, I believe, the late Lord Stamp among many others who drew attention to the necessity, not only of seeking further knowledge through research, but of collating and using the existing knowledge already available to us. Although he did not perhaps realise this at the time, Lord Stamp directed the attention of the Production Engineer to a sphere of opportunity far greater than has been so far realised by us. One of the easiest things in the world is to appoint an individual or group of individuals to carry out research into some new form of activity. We do not often realise that the past can provide us with the answer if only we take the trouble to search for it. It is here that the Library comes into its own, and it is here—if he realises it—that the Production Engineer can also enter into his own. Surely one of the principal characteristics of the Production Engineer is that he should take existing knowledge and apply it for the benefit of man. It is in the particular characteristic of application that he should realise his greatest strength, and the world to-day needs many more men not just for the discovery of new knowledge, but for the application of what is already known to us.

Some critics may well ask whether in the setting up of our Library we are carrying out an unnecessary duplication of facilities. I do not think so; it seems to me that the more we can provide, and the more easy our access to books and knowledge can be, the more we shall encourage people to browse among them, to pick out from them gems of knowledge that are to-day hidden from so many eyes; it is on this basis that I, among many, have encouraged the rehabilitation of our own Library.

Its success will not necessarily be in relation to the number of books on its shelves, although I hope in the near future to see a very large increase in that direction. Its greater success will come because of the use put to it by our members. I hope we shall encourage them in all possible ways and means to come here and study. I hope, now that we have a qualified Librarian, that our Library will be used for reference purposes to an even greater extent, and that members will be encouraged to ask for information and, even more important, apply it.

I hope, finally, that it will encourage more members to write worthwhile books. Writing a book, or even a paper, may in the earlier stages be revealing; it is certainly hard work. It can, however, be a great experience and amply repays one for the work involved. If our Library in future years is able to display more and better books, and papers written by our members, then it will really come into its own.



**APPRECIATION OF THE  
LATE RICHARD HAZLETON**

In rising to speak of the late Richard Hazleton, the Right Hon. Lord Sempill, A.F.C., Chairman of the Library Committee and a Past President of the Institution, said that in his long association with the Institution the invitation to give this appreciation was the greatest honour he had ever received.

"We who were privileged to father our now sturdy and still growing son—the Institution," he continued, "will remember those anxious hours of delivery and the many uncertain months that followed when some doubted if the infant would ever live to be weaned. Death at birth in the early months was very near for a child then regarded by the majority as unwanted, and sure to cause discord among the elder ones born in the preceding century.

"It was not for want of the desire of many that death did not knock at the door. One man alone prevented this, by inspiring some of us to mount guard outside whilst others tended the infant within until he could go abroad and make known his high purpose.

"Richard Hazleton's character was both gracious and engaging. All readily believed him a good man, and the majority, a great one. I stand as ever proudly with that majority, as I feel sure do those others of the early days, and ask you all to retain in your mind not so much a picture of his person, as you may see on the walls of the Library, but rather a picture of the form and features of his mind, which is eternal.

"He was one of the few truly great men I have been privileged to meet, and without question laid down his life for the ideal he was aiming to attain. At the same time, he was ever an inspiration to those of us who were working with him, and saw to it that we never flagged or became faint-hearted. He was integrity personified, completely devoid of any shadow of self-interest, and if ever there was a man—and such over the world are very few—who disproved the ever-quoted dictum of the famous historian and Parliamentary figure of the Palmerston administration, Lord Acton, he was that man.

"We shall ever miss his engaging personality, and our Headquarters seems dull without the sound of his pleasing voice, cheery laugh, and the power of unrivalled friendship and a candour that overrode all boundaries.

"Since his day the moral crisis over the world has deepened as many fail to appreciate and practice the Christian ideal that is the basis on which our civilisation rests. He saw this growing evil and by his example showed us the error. Let us all raise our thoughts to a higher plane, and strive yet more keenly to follow his example of service to our Christian civilisation without thought of self-advancement.

"We must be vigilant, as he was, and I would remind you of the saying of a well-known Irishman of the 18th century, one-time Master of the Rolls at Westminster :

"It is the common fate of the indolent to see their rights become a prey to the active. Liberty to man means eternal vigilance, which condition if he break, servitude is at once the consequence of his crime and the punishment of his guilt."

"Let us not fill our hearts with vain regrets, but rather let us contemplate and practice, so far as our frail condition permits, his virtues. Whatever in Richard Hazleton was the object of our admiration remains and will ever remain in the minds of men, transmitted to posterity in the records of Parliament, public bodies and this Institution through an eternity of years."

#### OPENING OF THE LIBRARY

Before opening the Library, the President, General Appleyard, said that he had been invited to prepare an address on "The Value of Learning". This seemed to him an impossible task, as the value of learning could only be assessed by those who had learned. Instead, therefore, he was going to express a few thoughts on "Just Learning".

"This is a book occasion," said General Appleyard, "and I began to contemplate what books in my life have had some effect on me. The first which came to mind was Grimm's Fairy Tales. I can still see the book with its pale green cover and coloured illustrations, and recall with what pleasure I read those wonderful tales of Grimm. I read Hans Andersen too, but Grimm was my first love."

"I have another book, in which is inscribed 'Midsummer Term, Upper Third Arithmetic Prize'. It is a book of poems, gathered together by Henley, and this book gave me my first love of poetry. I do not like modern poetry, but the old poetry is wonderful. I believe I was ten years of age at the time, and remember reading one verse of Ben Jonson :

It is not growing like a tree  
In bulk doth make man better be,  
A lily of a day  
Is fairer far in May,  
Although it fall and die that night,  
It was the plant and flower of light.

For a boy of ten to have that strike home to him and remain through a lifetime was really something.

"I read Harrison Ainsworth for some time—those wonderful novels which give a picture of historical England. Then when I was 18, somebody gave me Kimball's 'Industrial Organisation and Administration'. I read it, and knew then what I was going to be.

I was going to be a Production Engineer and a Manager. It fascinated me. I read all the others—Taylor, Gilbreth and the rest—but Kimball's was the book. Since then, my reading has become much looser—I like detective stories now.

"A man's reading is a valuable possession, and naturally varies with his make-up. The scientist, or the individual whose work is necessarily confined to narrow and definite limits, reads literature concerning his own work, and in his own detailed way. The man with a broader outlook reads in another way. All of it is part of the machinery of learning. But it is only a part, and I am not quite sure if it is the most important part.

"Technical learning and education is all very well in its way, but by itself it is nothing. Observation ; interest in the other fellow's work ; one's own experience in different fields ; more than anything the human contacts you make in life, your own quality of understanding, these point the way to only some of the vital paths of learning which must be trod.

"Reading is not always easy without understanding. When I was 15, one old boy told me I must read the essays of Emerson. Well, I read Emerson, and he bored me stiff. But when I was about 35, and had achieved some understanding, I read Emerson again, and I began to appreciate him, and understand what he was driving at.

"General Harbord wrote : 'The roads you travel so briskly lead out of dim antiquity, and you study the past chiefly because of its bearing on the living present and its promise for the future.' That is a delightful description of the value of reading of the past.

"As Mr. Puckey says, from reading you come on to talking, and from there to writing. To my mind the importance of talking and writing is that it forces you to make up your lack of knowledge, in order that you may not expose it to an audience whose knowledge may be greater than your own. You cannot speak or write unless your thoughts are clear, and it may only be after much work and striving that your mind does become clear. But you cannot give up, you must go on ; you cannot stand still on the two-way escalator of life, which moves only down and up, and here in the Institution we go up the escalator always towards our goal.

"It is vitally important to keep one's mental and intellectual freedom. We hear a lot to-day about freedom and the lack of it, but in reading, talking and learning we are free to do as we will. Literature is free, thought is free, and the man who is self-satisfied, the man who believes that he is right all the time, the man who walks always in a narrow path, will get nowhere in his search for the fullness of life.

"To speak a moment about the value of learning, to my mind this can only be measured by yourself and by your friends, by the

richness of your own life, which is always made richer by sharing it with your friends. I have spoken of freedom, freedom of thought, freedom of mind, freedom of intellect, freedom of action, something which has been earned for us by the great men who have preceded us. Something we have been near losing. Have we yet learned what it is that we nearly lost, and which the young men of tomorrow and all the tomorrows have to hold? It seems to me sometimes that we are too satisfied to let our freedom be frittered away from us. There are many forms of freedom, but I think ours is perhaps the most precious. It is a different kind of freedom from that enjoyed by the savage, the most primitive form of freedom, but out of my little book I can pick some lines of Wordsworth which give a deep picture of the heritage we have to guard :

It is not to be thought of that the flood  
Of British freedom which, to the open sea  
Of the world's praise, from dark antiquity  
Hath flowed ' with pomp of waters notwithstanding '  
Roused though it be full often to a mood  
Which spurns the check of salutary bands  
That this most famous stream in bogs and sand  
Should perish and to evil and to good  
Be lost for ever ; in our halls is hung  
Armoury of the invincible knights of old ;  
We must be free or die, who speak the tongue  
That Shakespeare spake ; the faith and morals hold  
Which Milton held. In everything we are sprung  
Of Earth's first blood, have titles manifold.

" Don't confine your learning to Engineering ; even greater fields lie all around you and if you learn in these, too, so, to your surprise, will your life's work in Engineering be better and your whole self fulfilled.

" I am very much honoured in being invited to be present tonight, and as President of the Institution, it is a proud moment when I declare the Hazleton Memorial Library open for the use, benefit and instruction of all the members of the Institution."

In proposing a Vote of Thanks to the speakers, Mr. J. E. Poulter, Vice-Chairman of the London Graduate Section, said that the Section members were very conscious of the great honour which the Institution had done them in asking them to make arrangements for the opening of the Hazleton Memorial Library. It was one of the greatest honours which a Graduate Section could have had.

Mr. Poulter thanked Council for extending this privilege to his Section, and the President for his very wide talk on the value of

learning, which would give many members much food for thought. He also thanked Mr. William Core for his address of welcome, Lord Sempill for his moving remarks on Richard Hazleton, and Mr. Shakeshaft for reading Mr. Puckey's address on the purpose of the Library.

In reply, General Appleyard thanked Mr. Oppenheimer for his chairmanship, and the London Graduate Section for the excellent way in which they had organised the opening of the Library.

**LIBRARY COMMITTEE** The main function of the Library Committee, which meets once a quarter, is to plan Library policy, and broadly to supervise the financial and physical administration of the Library services by the permanent staff. The detailed organisation of reference, abstracting and information services has been delegated to the Maintenance Sub-Committee, composed of the Graduate members of the main Committee.

Under its Terms of Reference, the Sub-Committee is charged with the establishment and maintenance of efficient reference and lending facilities, and of an abstracting service; keeping the classification under constant review; and preparing an annual budget for submission to the main Committee.

The extensive work involved in building up a comprehensive and modern library has been carried out almost entirely by the Maintenance Sub-Committee. It was considered that as the Library would be found most useful by the younger members of the Institution, the Graduates should play an important part in its reconstitution. The Sub-Committee has not taken its responsibilities lightly; for the past twelve months, assisted by suggestions from Sections throughout the Institution, they have worked continuously to ensure that the Library shall be the best of its kind, and the comprehensive selection of over a thousand publications, at present on the shelves, is convincing evidence of the hard work and careful thought which has gone into the task.

With the recent appointment of a qualified Librarian, the routine work of the Sub-Committee will be considerably lightened, but suggestions from members as to how the services might be improved or enlarged would be gratefully received.

The Chairman of the Library Committee is the Right Hon. Lord Sempill, A.F.C., and the Vice-Chairman is Mr. H. G. Shakeshaft, who is also Chairman of the Sub-Committee. Other members of the Library Committee are :—

- |                          |                      |
|--------------------------|----------------------|
| Mr. J. Blackshaw, M.B.E. | *Mr. H. G. Payne.    |
| *Mr. G. Cubitt-Smith.    | *Mr. L. J. Saunders. |
| Mr. R. Hutcheson.        | Mr. J. D. Scaife.    |
| Mr. H. L. Madeley.       | *Mr. R. Thorn.       |

THE INSTITUTION OF PRODUCTION ENGINEERS

Mr. D. H. Mason.	*Mr. G. C. Twine.
*Mr. R. T. Mustard.	*Mr. J. C. Zelenka.
*Mr. A. P. Oppenheimer.	

The Librarian to the Institution is Miss P. L. Cooper, B.A., who will also act as Secretary to the Library Committee. Miss Cooper, who recently came to the United Kingdom from Australia, is a graduate of the University of Tasmania, and an Associate of the Library Association, and has had considerable experience in technical library work.

(\*Members of the Maintenance Sub-Committee.)

PRODUCTION  
ENGINEERING

# SUMMER SCHOOL

OXFORD

1950

A Report of the Proceedings of the Production Engineering Summer School held at Oxford this year is now being published, and copies may be obtained from Head Office, price 2/6d. each, post free.

It would be appreciated if this form is used when ordering copies of the Report.

Please send me \_\_\_\_\_ copy/copies of the Production Engineering Summer School Report. I enclose Postal Order/Cheque for \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_  
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## REPORT OF THE MEETING OF COUNCIL

*Thursday, 26th October, 1950*

Council held its second meeting of the present Institution year on Thursday, 26th October, 1950 ; Mr. Walter Puckey, Chairman of Council, presided, and 38 Council Members were present.

**FINANCE** The Acting Secretary presented the accounts for the year ending 30th June, 1950. The Institution ended the year with a surplus of Income of £278, to which about another £100 would be added when all the overseas figures had been incorporated. In view of the fact that there had been an adverse balance of £7,534 at the beginning of the year, the position might be regarded as reasonably satisfactory, particularly as some unforeseen items of expenditure had had to be met ; £1,000 in connection with the Schofield Scholarships, owing to a loss on the dollar exchange, being outstanding among these.

Section expenses showed a commendable increase of more than £1,000, which was a sign of increased activity. As a result of rigid economy at Headquarters, the item for printing, postage, stationary and telephones had been reduced by more than £2,000. The audit fees appeared to be higher, but this was because the four overseas accounts had now been included. For the Mechanical Handling Exhibition the Council agreed that £250 should be spent, and the actual expenditure was £254. The Structural Repairs Account was now closed, and all the charges for repairs to Headquarters had been met. It had been decided to write off 10 per cent. of furniture, fixtures and plant, and the balance of the stocks of publications.

On the Income side the subscription income was over £10,000 more than for the previous year, due to the increased rates. A drop in membership of 20 per cent. had been allowed for, but the loss by resignations had been only 7 per cent., against the normal loss each year of 5 per cent. Journal receipts were higher, but the sale of publications was less. The Accounts would be presented to the Annual General Meeting in January next.

### **PRODUCTION ENGINEERING SUMMER SCHOOL**

The Chairman said that the first Summer School to be held by the Institution, at Oxford, had been voted a great success, and was likely to become a permanent feature of the Institution's work. He congratulated the organisers, especially as the cost to the Institution appeared to have been only £5.

Plans are being made for the second Summer School to be held in 1951, and the Master of University College, Durham, had very kindly offered accommodation.

**I.Prod.E.**

**CONFERENCE, 1951**

The Committee elected to organise the Conference had recommended that the word "International" be omitted, though special endeavours should be made to get people from all over the world to attend. The Conference would be held in Harrogate from 28th June to 1st July, and the theme would be "to facilitate the introduction of improved methods into industry". The Chairman stressed that every member of Council should support the Conference in every possible way. The Presidents of the three Yorkshire Sections had agreed to set up a local committee to sponsor the Conference, and to give active help both during the preparatory stage, and when the Conference took place.

It was agreed by Council that everything possible should be done to encourage Graduates to attend. The most useful suggestion was that firms employing a number of Graduates might make attendance at the Conference an award to the best Graduate.

**COMBINED PROGRAMME**

The Acting Secretary apologised for the delay in publishing the Combined Programme, but this was outside the control of Head Office, being entirely due to the prevailing dispute in the printing trade.

**INSTITUTION  
DINNER**

The Chairman said that those who attended the Institution Dinner would have shared the embarrassment of the President and himself at the interruptions of the speech of the President of the Board of Trade. Press reports bringing discredit on the Institution had been received from South Africa and Australia as well as from all over the U.K., and this adverse publicity would retard the Institution considerably in its quest for higher status and more responsibility. This was the second occasion on which the Institution had disgraced itself in the presence of a Minister of the Crown, and it would be well to remember that if there were a third time, it would be very unlucky indeed so far as the Institution was concerned.

**THE JOURNAL**

Mr. A. L. Stuchbery, Chairman of the Technical and Publications Committee said it was hoped very shortly to effect certain economies in the production of the Journal which would enable substantial improvements in the Journal to be made.

**OFFICIAL INSTITUTION PAPERS**

A report presented by the Technical and Publications Committee referred to the establishment of specially authorised Institution papers. It was felt that a scheme whereby each year about six named papers were read

to the Institution, as distinct from Sections, would greatly enhance the prestige of the Institution, and provide a nucleus of authoritative material for the Journal.

The Technical and Publications Committee were congratulated on an excellent report, which was unanimously adopted by Council, and the Committee were authorised to proceed with the scheme.

**SCHOFIELD  
TRAVEL SCHOLARSHIPS**

Mr. W. E. Park, Chairman of the Education Committee, reported that fourteen applications for the Schofield Travel Scholarships had been received this year, compared with forty-two in 1949. This decrease had caused some concern, and the Chairman suggested that Section Presidents and members of Council generally should do more to create a desire among a greater number of Graduates to apply. Information concerning the reasons why Graduates did not enter the competition for this extremely valuable award would be very helpful to the Committee.

**EDUCATION POLICY** Council approved the Memorandum prepared by the Education Committee on "The Development of Technological Education for Production Engineering". The Chairman said that he was discussing with Sir Thomas Hutton, General Manager of the Anglo-American Council on Productivity, the possibility of sending a team to America to study the methods of training and education of production engineers in that country, and to compare them with what was done in this country.

**MATERIALS HANDLING** The Education Committee were maintaining close contact with the Materials Handling Subcommittee, with a view to preparing a draft syllabus as a necessary preliminary to the planning of courses for students.

**FULL TIME COURSES** The Education Officer reported that a deputation from other Institutions had asked the Minister of Education to set up a scheme for the "sandwich" type of course recommended by the I.Prod.E. The Minister had pointed out that it was of little use for Councils of Institutions to adopt these reports in principle unless their members supported "sandwich" schemes in practice. Such schemes had not been well supported in the past.

**MEMBERSHIP** Mr. E. P. Edwards, Chairman of the Membership Committee, reported that during the first two months of the present financial year, twice as many applications had been received as in the corresponding period of the previous year. Since then the rate of increase had dropped. Increasing membership could only come through the influence of the Sections, Section Presidents, and members of Council generally.

**MEASUREMENT  
OF PRODUCTIVITY**

Mr. B. H. Dyson, Vice-Chairman of the Research Committee, referred to the national survey at present being carried out by the University of Birmingham. He hoped to present a report in January, 1951.

The I.C.W.A. were playing a major part in the Sub-Committee on Machine Utilisation. They were working in conjunction with industry, and with their full-time Technical Officer were visiting various industrial concerns with the object of gathering statistics.

The progress of the work measurement units so far had been extremely successful, and the Chairman congratulated the Research Committee on the work it was doing.

**WORKING GROUPS**

Working Groups were being asked to give the results of their discussions by the end of the present Institution year.

**APPOINTMENT OF  
RESEARCH OFFICER**

The Chairman said that the appointment of a Research Officer in the near future would have to be seriously considered, owing to the fact that the Institution was losing the valuable services of Miss J. M. Pye, Secretary to the Research Committee. There had been hesitation in making this appointment because the Institution had to match its appointments to its finance. The matter would be discussed shortly by the F. & G. P. Committee, and if the way was clear it was obvious that one of the pressing needs of the Institution was to provide an opportunity of carrying on research activities in a practical sphere. Council agreed that this should be done.

**STANDARDISATION**

Mr. J. E. Baty, the Chairman of the Standards Committee said that suggestions from members for suitable work for standardisation were still welcome. The Lemon Committee had emphasised that this was one of the most important matters to be dealt with at the present time.

**LIBRARY**

Mr. H. G. Shakeshaft, Graduate, Vice-Chairman of the Library Committee, presented the report of the Library Committee. He said that the abstracting service would be inaugurated in the next issue of the Journal, and with it would be circulated copies of the Library Rules. There were just over one thousand books in the Library at present, but to fill the shelves many more were required. He appealed to all Sections to give books.

At the moment 70 periodicals were regularly received. The provision of periodicals for reference purposes would be one of the basic duties of the Library, which would also provide an information service for members.

### SECTION REPORTS

Council received the following reports from Local Sections :

**BIRMINGHAM** The Session began in September with a lecture by Mr. M. Seaman on "Fundamentals of Production Management". The Committee intend to introduce Institution activities to a wider field through the selective distribution of visitors' tickets for lectures.

The Section President and members were hosts to a party of 100 members of the Engineering Section of the British Association and their ladies at a *Conversazione* held in September. The evening provided an opportunity for the exchange of ideas between members of both organisations.

The Section Committee are discussing the award of the Section President's Prize for the best paper presented by a Graduate during 1949/50.

A prominent part is being taken in a Productivity Exhibition to be held in the Central Technical College, Birmingham, early in January. The part of the Exhibition relating to Jigs, Fixtures and Work Handling Devices is the responsibility of the Section, and the Section Materials Handling Research Group are co-operating in the detailed planning necessary.

**BIRMINGHAM GRADUATE** The Section Committee has received an interesting interim report from Mr. B. E. Stokes, member of the Birmingham Graduate Committee and Schofield Scholar, while he was in the U.S.A. studying American methods of Production Administration. Mr. Stokes will address the Birmingham Graduate Section later in the year on the subject of his investigation.

The 1950/51 programme covers a wide field including heat treatment practice, steel production, application of carbides and stud welding. Next January, Mr. Lewis C. Ord will address a joint meeting of the Coventry, Wolverhampton and Birmingham Graduate Sections at Birmingham on "The Technique of Industrial Investigation".

The new Session started off well with a visit to Ansells Brewery, Birmingham. A large party attended and everyone was interested to find a highly mechanised plant in the bottling store. The party was entertained to luncheon by the Company.

**BOMBAY** The membership of the Bombay Section has grown rapidly, the number of members of all grades as at September 4th, 1950, being 80. It is optimistically expected that the century will have been reached before the end of this year.

Two further very successful Section Meetings have been held, one at which Mr. G. G. Patman, M.I.Prod.E., read his paper

entitled "Incentives to Production" and another at which Captain (E) A. Briggs, O.B.E., R.N., read an excellent paper entitled "Some Human Aspects of Industrial Management". Both papers were well received by large and representative gatherings, and lively and controversial discussions ensued.

Further activities have been planned which will cover visits to interesting and instructive industrial undertakings in the Bombay area, film shows on technical matters of particular interest to Production Engineers, and the holding of a series of problem meetings at which many day to day production difficulties will be discussed. A special Sub-Committee, under the Chairmanship of Mr. S. S. Lal, M.I.Prod.E., has been formed to investigate and draw up a series of problems which should have technical and educational value to our members.

Arrangements have been made to form a Working Group to investigate Materials Handling, as it applies to the somewhat unique conditions prevalent in India, and whilst it is felt that no useful contribution can be made to the Research Committee's findings, the Committee of the Bombay Section believe that a report on the primitive methods used in Materials Handling in India will undoubtedly have considerable value from a purely comparative point of view.

**CALCUTTA** No Section Meetings have been held during the period but regular Committee Meetings have taken place. The Section now has its own Sub-Committee on "Mechanical Handling" and since its formation, only two months ago, three Meetings have been held. It is hoped to have something more concrete to report next quarter.

The new Section President and Committee look forward to another successful season. A monthly programme of talks has already been fixed up to May, 1951. In addition, numerous visits to factories have been arranged.

**CORNWALL** Section activities have been at a standstill during the Summer months.

Owing to the very limited industrial activities in Cornwall, it is very difficult to find anyone willing to come to this part of the country to lecture. Consequently, it is extremely difficult to arrange a programme for this Winter Session.

**DUNDEE** During the interval since the submission of the last report, the Dundee Section Committee have held two meetings.

Arrangements are complete for the visit of the Work Measurement Research Survey Unit to Dundee.

A very full programme of monthly lecture meetings has been arranged for the Session. The Committee will meet monthly during

the Session, and an extra meeting was scheduled for 10th October, to meet Mr. Walter C. Puckey, Chairman of Council, for his visit to Dundee on that date.

**EDINBURGH** An interesting programme for the ensuing Session has been completed. Mr. J. Wotherspoon, the newly elected Section President, has taken office, and the Committee have met regularly to deal with the business of the Section.

A number of Applications for Membership are pending, but these are slow in coming forward.

**HALIFAX** There has not been any general activity during the Summer months, but the Committee have arranged a varied programme of lectures, the first of which will be in October, when Mr. H. H. Norcross will give his paper on "Costing as an Aid to Management."

The Annual Dinner and Dance will be held at the George Hotel, Huddersfield, on 24th November, 1950.

**LEICESTER** The past quarter has been one of intense preparation for the coming Winter Session of lectures and the Section Committee, at its regular monthly meetings, have arranged a full programme, covering a wide and varied field.

The Section made arrangements for the Joint Committee on Measurement of Productivity to carry out a Research Survey in the area during September. The Survey took the form of a film, a test, and a discussion amongst leading Production Engineers and Cost and Works Accountants.

**LONDON** The main activity during the past few months has been the formation of the two new Sub-Sections, one covering South Essex and the other covering Rochester and district.

The Reading Sub-Section, formed last session, has a full lecture programme for this winter, and is also organising visits to places of interest.

Under the Chairmanship of Mr. W. Core, London Section President, a meeting was held at the South-East Essex Technical College when Mr. D. Bailey was elected Chairman and Mr. P. H. W. Everitt Hon. Secretary of the South Essex Sub-Section. Commencing with the Inaugural Meeting on 18th October a full Session's lecture programme has been arranged. In order to cater for as many members as possible, in an area where cross-country travel by public vehicles is difficult, meetings during the Session are being held in Dagenham, Chelmsford and Ilford.

At Rochester Mr. Core presided over a meeting where the decision was taken to form the Rochester and District Sub-Section. Mr. A. G. Wybron was appointed Chairman and Mr. W. G.



Clements was appointed Hon. Secretary of this Sub-Section. Since then work has been done in the area to arouse interest in the newly formed Sub-Section. Their very successful Inaugural Meeting when Mr. W. Puckey, Chairman of Council, launched the new Sub-Section with a talk "Public Service through Productive Efficiency", was held on 5th October and will be followed by regular meetings during the Session.

Arrangements have been made to hold a series of lecture meetings at Croydon, and the Croydon Study Groups have been quite vigorous, having held regular meetings throughout the summer.

The Groups will study the manufacture of a fractional horse power electric motor and are preparing the necessary data.

A combined meeting of the Groups was held on 10th October to review progress and to decide on future plans.

The Chairman of these Groups, Mr. F. G. English, has been appointed a member of the Institution's Research Committee.

A special lecture meeting is to be held in Brighton early in 1951.

**CHANGE OF HON. SECRETARY** Mr. H. W. Townsend resigned from the position of Section Hon. Secretary to which position Mr. R. Hutcheson has been appointed. Mr. Townsend is continuing to look after the Study Groups and special lecture meetings referred to above.

**MEMBERSHIP** The Membership Campaign is showing results and as the outcome of a personal appeal by Mr. W. Core to existing full members, applications for full membership are being received from men of really good standing in industry.

**SECTION PRESIDENT'S PRIZE** Several papers were judged for this award which goes to Mr. G. Cubitt-Smith, Grad.I.Prod.E., for his paper "Development and Application of Metallic Arc Welding Process."

A very noteworthy event was the visit to Sweden organised by the London Graduate Section. This was so successful that a second tour was arranged and carried through with equal success.

Arrangements are well in hand for the Section Dinner to be held on 1st February. Major General K. C. Appleyard has accepted an invitation to attend as principal guest.

**LINCOLN** During the Summer, members visited the Diesel Engine Works at Peterborough of F. Perkins Limited, and the Open Top Can Factory at Sutton-in-Ashfield of the Metal Box Company.

An interesting programme has been arranged for the winter months. The first lecture was held in September, when Mr. J. R. Sharp of Lansing-Bagnall Ltd., lectured on Mechanical Handling.



#### REPORT OF THE MEETING OF COUNCIL

**LIVERPOOL** The establishment of a Graduate Section has been achieved and this Section has now its own Committee who have prepared a series of lectures for the 1950-51 session which opened in September. It is hoped that all Students and Graduates will support their Section by regular attendance at all meetings. In future, the Graduate Section Committee will contribute their own Section Quarterly Report.

The senior Section commenced their programme with a Lecture by Mr. W. Robinson, B.Sc., A.M.I.E.E., entitled "Lighting for Production." The October meeting will take the form of a "Brains Trust", when questions relating to Production Engineering will be discussed, and the November lecture will be given by Mr. J. Hobbs, taking as his subject "Inspection Standards as an Aid to Production".

The membership of the Section has now reached the total of 172. It is the aim of the Section to make this total at least 200 before the Annual General Meeting.

**LUTON** A full programme of lectures has been completed. The Committee have invited a panel of specialists on Materials Handling problems to form a Study Group. Other subjects are under discussion.

The need for an increase in Corporate members is receiving attention by a special display at each lecture.

**LUTON GRADUATE** During the 1949/50 Session a series of lectures by very well-qualified lecturers was presented, covering aspects of the non-metallic materials and new techniques likely to enter into the sphere of the progressive production engineer. A successful visit was made to the works of Kodak Ltd., at Harrow, during February.

At the Annual General Meeting Mr. H. G. Payne was re-elected Chairman for a second time. An endeavour will be made to inaugurate various working parties and study groups during the coming season.

For 1950/51 a somewhat different programme has been arranged in which lectures will alternate each month with factory visits, providing all Section members with an opportunity to attend at least one function during the year.

**MANCHESTER** The activities of the Section since the last report have been confined to the Section Committee.

The programme for the 1950/51 Session has been arranged. There is a variety of subjects for discussion, ranging from Materials Handling in the Textile Industry to various aspects of Atomic Physics. Also, arrangements have been made to hold a survey of rating practice to be conducted by the Work Measurement Research

Unit of the University of Birmingham in October, on the premises of the Fairey Aviation Company, under the Chairmanship of Mr. H. G. Gregory.

Consideration has been given to the formation of a Sub-Section in the Potteries area, and the Section Committee unanimously make the following resolution:

"The Manchester Section Committee desires that the Council of the Institution gives sanction to the formation of a Sub-Section in the Potteries, to be called the 'Stoke-on-Trent Sub-Section.' The area of this Sub-Section to be as agreed between the representatives of the Wolverhampton and Manchester Sections at the informal meeting held at Stoke-on-Trent on Thursday, July 13th, 1950."

Council approved the formation of this Sub-Section.

#### **N. EASTERN GRADUATE**

Due to holidays, no general meetings were held during the last quarter. The working party on Materials Handling met once only, and some progress was made. The Committee are looking forward to a Session of increased activity.

#### **NOTTINGHAM**

During the summer months the activities of the Section have not been extensive. In June, members had the opportunity of visiting P.E.R.A. at Melton Mowbray, where a pleasant and interesting half-day was spent.

In September the Section visited the factory of the Imperial Typewriter Company Limited, Leicester, to inspect the production methods employed in the manufacture of typewriters.

There has been a steady flow of applications for membership, although, naturally, there has been a "fall off" during the summer. A special effort is being made to recruit new members to compensate for the loss caused by the formation of the full Section at Lincoln.

#### **READING**

No meetings have been held during the Summer, and the first lecture of the new session will be held in October.

A social function in the form of a visit to the R.M.S. "Edinburgh Castle" at Southampton Docks in August, was enjoyed by 35 members and their ladies.

#### **SHEFFIELD**

A full programme of lectures has been arranged for the coming Session and additional meetings in conjunction with kindred societies in the district are contemplated. It was very much appreciated that the President was able to arrange to address the Section at the opening meeting in October, when leading industrialists were present. The speakers at the following meetings are all competent engineers in their own sphere, and a successful season is expected.

REPORT OF THE MEETING OF COUNCIL

It is pleasant to record that Mr. L. R. Evans has accepted the Chairmanship of the Section for a further term and also that he, and Messrs. G. R. Pryor and C. Williams are doing valuable work on National Committees of the Institution.

**SHREWSBURY** During the quarter the Committee have met on three occasions and the meetings have been well attended. The main business dealt with was the selection of lecturers for the 1950/51 Session. The Committee have also discussed the varied literature received in connection with "Materials Handling in Industry" and the Membership campaign.

The Winter programme is now practically completed, and the first lecture entitled "Time and Motion Study and Incentives" was given by Mr. R. C. Cullen, on September 27th, 1950.

**SOUTH AFRICA** In July, 1950, Mr. C. P. H. Potgieter, Works Secretary of the Iscor Works (South African Iron and Steel Industrial Corporation Ltd.), delivered a paper entitled "The Planning of Steelworks Production". This meeting was attended by approximately 50 members and guests.

Mr. R. H. Arbuckle, a member of the South African Sub-Council, read the paper, "The Production Engineer—His Education and Training" by Mr. T. B. Worth, M.I.Mech.E., A.M.I.E.E., M.I.Prod.E., in August, when 25 members and guests were present.

Approximately 105 members and guests attended the Annual General Meeting held in Johannesburg, on 11th August, 1950.

The most recent paper was given by Dr. J. H. Scholtz, the Superintendent of the Coke Ovens and By-Product Plant at Iscor, Pretoria, and was entitled "By-Product Coking at Iscor, Pretoria."

During the last quarter two members were recommended for acceptance.

**SOUTHERN** The augmented Committee have met twice and look forward to a successful winter Session, commencing with a lecture by Dr. E. J. B. Willey entitled "Electronics in Industry".

The Committee have decided to hold all lectures for 1950/51 in Southampton's leading hotel—The Polygon, where it is hoped they will be better supported.

**WESTERN** The lecture programme for the 1950/51 Session is now completed, and covers a wide variety of subjects. With a view to establishing a relationship with other Institutions, a joint lecture meeting with the Institute of Cost and Works Accountants has been arranged, when "Measurement of Productivity" will be discussed. At this meeting two representatives of each body will put forward their views and opinions, and members are looking forward to a very interesting evening. In addition,

arrangements have been made for the Gloucestershire Engineering Society and The Plastics Institute joint meeting, this lecture to be held in Stroud.

The Work Measurement Research Survey for this district is being conducted in Bristol on 2nd November. The Committee arranged for the Section's Annual Dinner Dance to take place on 20th October, 1950.

**WOLVERHAMPTON** The Summer outing to Rotol Limited proved very interesting, and was thoroughly enjoyed by those taking part.

It is pleasant to record that the past Section President, Mr. A. J. Aiers, has been elected a Member of Council.

The winter programme has been completed.

The first lecture was held on 4th October, when Dr. D. H. Galloway presented his paper—"The Activities of P.E.R.A."

**WOLVERHAMPTON GRADUATE** A party of 120 were the guests of The Bristol Aeroplane Company.

At the June meeting, two Graduates of the Section gave lectures on "The Effective Use of Material".

The Committee have arranged a full and interesting programme for the new Session.

### ELECTION OF MEMBERS

The following were elected to Membership by Council :—

#### BIRMINGHAM SECTION.

**AS MEMBER :**

W. H. Hodgetts.

**AS ASSOCIATE MEMBERS :**

A. H. Bevan, S. C. Hall, A. Johnson, J. Partington, R. J. G. Phelps, D. H. Phillips, C. H. Viles.

**AS ASSOCIATE :**

D. J. Desmond.

**AS GRADUATES :**

D. H. W. Thomas, S. K. Ghose.

**SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :**

H. Bainbridge, C. Cameron, G. Dixon, E. G. Kinch, S. A. Onions, E. B. Taylor, J. E. Thorpe, R. D. Tomkinson, A. C. Turner.

**AS STUDENTS :**

H. L. Barton, R. B. Beard.

**Transfers :—**

**FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :**

H. G. Dagger.

**FROM GRADUATE TO ASSOCIATE MEMBER :**

E. Griffin, N. E. Wall, E. G. Worrall.

**FROM STUDENT TO GRADUATE :**

D. A. Abernethy, P. R. Bowen, K. Tasker, R. R. Walford.

REPORT OF THE MEETING OF COUNCIL

BOMBAY SECTION.

AS MEMBER :

F. E. Goodwin.

AS ASSOCIATE MEMBERS :

P. Ganguly, G. L. Lewis, D. M. Odhavji.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :

N. L. Varma.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

E. J. Eduljee, K. D. Kohli.

CALCUTTA SECTION.

AS ASSOCIATE MEMBERS :

S. Alexander, P. K. Dutta, D. S. Kanwar, A. A. Khan, S. S. Palit.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :

K. L. N. N. Bhala.

AS STUDENTS :

M. Ganguly, M. Akram, M. K. Ray.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

V. Agarwala, B. Bysakh, S. N. Chanda.

CORNWALL SECTION.

Transfers :—

FROM ASSOCIATE MEMBER TO MEMBER :

F. W. Ross.

FROM GRADUATE TO ASSOCIATE MEMBER :

F. A. Cheshire.

COVENTRY SECTION.

AS MEMBERS :

J. D. Frier, C. A. Minns.

AS ASSOCIATE MEMBERS :

D. R. Eaves, T. Garne, B. F. P. Membrey.

AS GRADUATES :

J. D. Hopkins, K. W. Jones, J. R. Love.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :

A. S. Hopkins.

AS STUDENT :

R. H. Doble.

Transfer :—

FROM ASSOCIATE TO ASSOCIATE MEMBER :

H. Wiercinski.

DERBY SECTION.

AS ASSOCIATE MEMBER :

J. Hill.

Transfer :—

FROM GRADUATE TO ASSOCIATE MEMBER :

K. G. Keeling.

DUNDEE SECTION.

AS ASSOCIATE MEMBER :

W. MacG. Gunn.

AS GRADUATE :

J. G. Morton.

THE INSTITUTION OF PRODUCTION ENGINEERS

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :  
R. A. R. Coutts.

EASTERN COUNTIES SECTION.

AS ASSOCIATE MEMBERS :  
G. R. W. East, J. W. Hazell.

AS GRADUATE :  
R. W. H. Quinton.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :  
A. A. W. Dawkins.

GLASGOW SECTION.

AS ASSOCIATE MEMBERS :  
A. O. Slater, J. J. Wilson.

AS GRADUATES :  
C. R. Basu, W. J. Humphrey, W. S. Robertson.

Transfers :—  
FROM ASSOCIATE MEMBER TO MEMBER :  
J. Platt.

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :  
H. F. McC. Hopkin.

HALIFAX SECTION.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :  
J. Taylor.

AS STUDENT :  
M. R. S. Barlow.

Transfer :—  
FROM ASSOCIATE MEMBER TO MEMBER :  
G. Smithies.

LEICESTER SECTION.

AS MEMBER :  
Lt.-Col. G. D. Pegler.

AS ASSOCIATE MEMBERS :  
C. J. Knight, T. A. C. Sparling.

AS GRADUATE :  
G. B. Ball.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :  
A. F. Masters, W. T. Tory.

AS STUDENT :  
R. J. Rudkin.

Transfers :—  
FROM GRADUATE TO ASSOCIATE MEMBER :  
L. Ling.

FROM STUDENT TO GRADUATE :  
A. Garner.

LINCOLN SECTION.

AS GRADUATE :  
R. W. Lacey.

REPORT OF THE MEETING OF COUNCIL.

LONDON SECTION.

AS MEMBERS :

J. O. Bowley, J. J. Coppen, H. C. Croucher, H. C. Hewlett, F. W. McCartney.

AS ASSOCIATE MEMBERS :

W. J. Anderson, F. W. Barber, R. W. Berry, E. A. Blandford, R. Bradford, B. Camprubi, S. A. Church, J. N. Colledge, W. T. Cottingham, J. Davies, F. Eckersley, N. V. Fisher, G. F. Garrett, W. E. L. Green, P. E. Hawes, W. Hodgkisson, E. D. Johnson, H. Konn, J. Lamb, G. A. Martin, L. W. Mellish, J. T. O'Callaghan, L. C. Read, W. Robinson, D. A. Rose, A. E. Shinn, L. W. Silk, R. S. Taylor, E. L. W. Wadbrook, A. Waterhouse.

AS ASSOCIATES :

B. V. Harmes, R. A. Lowe, J. H. Whitehead.

AS GRADUATES :

P. A. Blundell, R. T. F. Chapman, A. F. L. Cheetham, J. Cockell, D. Hitchings, J. L. Noble, F. T. Purse, D. Rose, R. A. Schooley, W. A. J. Seton, E. C. Spurr, A. G. Thomas, D. W. Wiles, F. H. Williams, R. Wroc.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

B. J. Andrews, G. T. Archer, H. Barclay, F. Brodie, P. T. Brown, D. E. Clarke, A. E. Clauson, A. F. Clay, H. Clements, C. Cooper, J. V. Courtney, L. D. Mathews, D. G. Goscomb, A. J. Grainger, J. G. Hyland, B. W. Kent, L. A. Liddle, G. Martin, D. H. Mathew, D. A. H. Pennick, R. G. Pledger, A. E. Prail, B. Purt, F. G. Russell, T. R. Russell, P. J. Smallbone, R. W. E. Steinkamp, O. J. Swannie, P. H. Trigg, W. R. Watts, J. E. Weatherley, R. L. Whitley.

AS STUDENTS :

R. J. Herbert, W. G. Peters, R. R. Spilman.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

W. R. Beale, A. E. Capper, A. K. Haskins, J. C. Knight, S. G. Lane, C. W. Luck, E. J. Parker, F. W. Whitworth.

FROM GRADUATE TO ASSOCIATE MEMBER :

H. C. Dickinson, N. H. Stait.

FROM STUDENT TO GRADUATE :

J. S. H. Budds, K. J. Hazelden, R. Hedley, D. A. Lamb, A. A. Lister.

LIVERPOOL SECTION.

AS MEMBER :

L. G. Culshaw.

AS ASSOCIATE MEMBERS :

H. L. Houghton, E. H. Wipp.

AS ASSOCIATE :

E. Jeacock.

AS GRADUATES :

C. R. D. Gupta, R. T. Spencer.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

D. H. Boomer, C. W. A. Haigh, E. A. Hewitt.

Transfer :—

FROM ASSOCIATE MEMBER TO MEMBER :

L. C. Jarman.

LUTON SECTION.

AS ASSOCIATE MEMBERS :

J. Keen, H. P. Mott, V. T. Townsend.

THE INSTITUTION OF PRODUCTION ENGINEERS

AS GRADUATES :

M. W. French, A. W. Rooney.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

F. W. Babs, I. Calverley, P. G. Clark, A. L. Cole, E. W. Cook, M. R. L. Davidson, R. W. Dimmock, M. F. Eacock, M. G. Foulger, D. C. Haynes, D. A. Hoare, J. D. Holland, A. Hughes, D. K. Filby, J. A. Loader, R. S. Marshall, T. I. McClymount, R. J. Nichamin, F. J. L. Reeves, K. R. Sayer, T. K. Tapp, H. S. Thomas, A. M. Warr, J. B. Wilcox.

Transfers :—

FROM ASSOCIATE MEMBER TO MEMBER :

N. A. Maskell.

FROM STUDENT TO GRADUATE :

K. A. Steele.

MANCHESTER SECTION.

AS MEMBER :

A. W. Paton.

AS ASSOCIATE MEMBERS :

A. R. Houseman, J. O. Mayer, Major A. Ormerod, H. F. Stringer, E. Taylor, R. R. Simmons.

AS GRADUATES :

R. L. Bamford, K. Bird, B. Booth, S. Friesner.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

N. Bamford, F. R. Clare, R. Cooper, F. Mills, H. Ogden, J. Schofield, J. P. Speakman, D. H. Williams.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

J. M. Clegg, F. Horsfield.

FROM GRADUATE TO ASSOCIATE MEMBER :

D. McMakin.

MELBOURNE SECTION.

AS MEMBER :

A. E. Smith.

AS ASSOCIATE MEMBERS :

L. D. Bryan, J. D. McLauchlan, F. W. Penny, E. J. M. Trinder.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

F. Allison, A. E. Long.

NEW ZEALAND.

AS ASSOCIATE MEMBER :

H. K. Pickering.

NORTH EASTERN SECTION.

AS MEMBERS :

J. N. Adamson, J. E. Steel, W. G. F. Westbrooke.

AS ASSOCIATE MEMBER :

R. R. Leake.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

G. L. Goode, W. G. Mitchell.

REINSTATED AS ASSOCIATE MEMBER :

W. Bennett.



REPORT OF THE MEETING OF COUNCIL

NORTHERN IRELAND SECTION.

AS ASSOCIATE MEMBER :

J. G. Easterbrook.

NOTTINGHAM SECTION.

AS MEMBER :

H. Pinch.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :

W. E. Gosling.

PRESTON SECTION.

AS ASSOCIATE MEMBERS :

B. Caldwell, J. Glennie, H. T. A. Hayes.

AS GRADUATES :

J. Donclan, W. S. Hasler.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

R. Brooks, H. Draper.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

A. A. Haselum, A. Wilson.

FROM GRADUATE TO ASSOCIATE MEMBER :

S. Longden.

READING SECTION.

AS ASSOCIATE :

F. Austin.

AS GRADUATE :

H. A. V. Parke.

AS STUDENTS :

F. R. Funnell, D. W. Pickston, M. H. Turner.

Transfer :—

FROM STUDENT TO GRADUATE :

P. A. Hawkins.

SHEFFIELD SECTION.

AS MEMBER :

P. A. E. Jump.

AS ASSOCIATE MEMBERS :

F. W. Cunningham, E. Downey, W. H. Newburn, E. Sweeney.

AS GRADUATES :

A. Murray, R. H. Whitehouse.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

A. Goodwin, A. N. Mukerji, E. Nichols, S. W. Orr.

AS STUDENTS :

R. Brumpton, R. D. Hind.

AFFILIATED FIRM :

Hadfields Ltd.

CHANGE OF AFFILIATED REPRESENTATIVE :

S. Leetch.

Transfer :—

FROM ASSOCIATE TO MEMBER :

H. G. Sissons.

SHREWSBURY SECTION.

SUCCESSFUL CANDIDATE IN THE 1950 GRADUATESHIP EXAMINATION :

C. C. Clogstoun.

AS STUDENT :

S. A. Gwilliam.

SOUTHERN SECTION.

AS ASSOCIATE MEMBER :

J. Grime.

AS STUDENT :

D. M. Warinton.

SOUTH WALES SECTION.

AS ASSOCIATE MEMBERS :

W. D. J. Gabriel, A. G. Griffiths, A. R. Smith.

SYDNEY SECTION.

AS MEMBERS :

F. J. R. Blunsden, W. J. Treloar, R. W. Williams.

AS ASSOCIATE MEMBERS :

O. A. Crooks, E. C. Dearman, J. A. Ford, P. H. Hofman, D. T. Middleton,  
R. L. Turnbull.

AS STUDENT :

J. A. De Jong.

Transfers :—

FROM ASSOCIATE MEMBER TO MEMBER :

J. Piggott.

FROM ASSOCIATE TO MEMBER :

N. A. Essetman.

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

W. C. Ashworth, C. J. R. Frazer, R. Harvey, F. H. E. Herbert, R. H. C.  
Jenkins, S. Layton, J. H. Longhurst, D. Murray, J. F. Wilkie.

WESTERN SECTION.

AS MEMBER :

H. R. Haag.

AS ASSOCIATE MEMBERS :

W. C. Edmunds, R. E. Gates, H. Hoare, P. Mackay-James.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

R. A. A. Buck, D. G. Iles, P. W. Lambert, C. L. Mawood, I. McP. Quilter,  
A. C. Stoate, A. E. Veness, D. J. Yeandel.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

P. L. Hepworth, H. G. Smith.

FROM STUDENT TO GRADUATE :

D. E. Furnis, W. A. Keightley, M.A., Phelan, R. J. White.

WOLVERHAMPTON SECTION.

AS MEMBER :

C. H. Howarth.

AS ASSOCIATE MEMBERS :

B. E. Hackley, L. C. Hayward, E. Nuttall, T. K. Prothero.

AS GRADUATES :

F. Bernheim, R. C. Briggs, L. F. Jones, D. Leek, P. N. Johnson.

REPORT OF THE MEETING OF COUNCIL

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

T. J. Butler, R. G. Clark, P. C. Clough, C. G. Gamston, J. L. Hughes,  
W. L. Pace, E. Perry, R. H. J. Tyson, L. J. Ward.

As STUDENTS :

K. C. Bowen, W. F. Powell.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

J. G. Allport, J. W. Butcher, R. F. Hill.

FROM GRADUATE TO ASSOCIATE MEMBER :

E. H. Terrett.

FROM STUDENT TO GRADUATE :

K. Davies, D. J. Wyers.

YORKSHIRE SECTION.

As ASSOCIATE MEMBER :

P. J. Gibbons.

As GRADUATES :

W. Roebuck, D. F. Sellars.

SUCCESSFUL CANDIDATES IN THE 1950 GRADUATESHIP EXAMINATION :

H. Armitage, K. Barry, G. Horner, D. Kaye, J. Keightley, J. P. Mellor,  
A. C. Midgley, N. B. Miller, M. H. Norwood, P. M. Porter, T. Rippon,  
T. Robinson, N. P. Spencer, J. Swanson.

As STUDENT :

A. W. Riley.

Transfers :—

FROM ASSOCIATE MEMBER TO MEMBER :

S. Francis.

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

L. Townend.

FROM GRADUATE TO ASSOCIATE MEMBER :

A. B. Dear.

FROM STUDENT TO GRADUATE :

E. Dobson, W. L. Seaman, J. C. Varley.

NO SECTION.

As GRADUATE :

S. Roy.

Transfers :—

FROM INTERMEDIATE ASSOCIATE MEMBER TO ASSOCIATE MEMBER :

F. J. Cartwright, J. F. D. Giecco.

DATE OF NEXT MEETING

Thursday, 25th January, 1951, at 11-00 a.m.,  
at 36, Portman Square, London, W.1, to be  
followed by the Annual General Meeting at 4-00 p.m.

## ANNUAL DINNER OF THE INSTITUTION

Wednesday, 4th October, 1950

The Annual Dinner of the Institution was held at the Dorchester Hotel, London, W.1, on Wednesday, 4th October, 1950. Major-General K. C. Appleyard, C.B.E., T.D., D.L., J.P., M.I.Mech.E., A.I.M.E., A.M.I.Min.E., President of the Institution, occupied the chair, and nearly six hundred members and guests were present, the guest of honour being the Rt. Hon. J. Harold Wilson, O.B.E., P.C., M.P., President of the Board of Trade.

The Loyal Toast, proposed by the President, having been honoured, the Rt. Hon. J. HAROLD WILSON, President of the Board of Trade, proposed the toast of

“THE INSTITUTION OF PRODUCTION ENGINEERS.”

He said : “ I am very happy to be here to-night to propose the toast, on behalf of my fellow-guests, of this Institution. I am the more happy in that I was prevented from being present, as I was originally invited to be, at a gathering of this Institution originally scheduled for the 23rd February last. Since that date was in fact polling day in the General Election, I found some little difficulty in being able to attend. (*Laughter.*) I gather you had some anxiety that this might occur again to-night, but I am glad to say that, thanks to the robust state of health of my colleagues in the Parliamentary Party (*Laughter*), a recent Parliamentary division which, if it had gone the wrong way, might have made it difficult for me to be present to-night, passed off with great success (*Laughter*). I am glad to be able to say, thus relieving the anxieties of all of you, that when I left them at Margate, all my colleagues were in a state of good health and high spirits. The fact that I have got away with that without any trouble shows that I can get away with anything ! (*Laughter*).

“ The last time that I had the pleasure of addressing members of this Institution was when I visited the Liverpool Section under the chairmanship of our friend, Mr. B. A. Williams, who is here to-night, two years ago. On that occasion, emphasising the importance of the engineering industry, and of production engineering in the widest sense, in our export drive, I outlined four tasks that were then facing the country. The first was to repair and replace war damage and make up for war-time wear and tear ; the second, to proceed at the fastest possible rate with the re-equipment and the modernisation of the capital fabric of our industries ; the third, to

raise the standard of living of our people by the maximum possible supply of consumer goods, as well as the imports that our exports had to buy ; and the fourth, to build up a situation of strength in our overseas economic relationships, so that at the earliest possible date we should be able to stand on our own feet and pay our way in the markets of the world (*Applause*). Those were undoubtedly our four big problems when we surveyed the scene two years ago.

"Looking back on those two years, I think we can say that they have not been wasted. British industry and the British people have responded to the challenge in a magnificent way. We have largely made good the damage of those war-time years. We have made great progress in re-equipment ; we have made good not merely the damage of the war-time years but also, as we are all bound to admit, some of those years of stagnation before the war. Our national production is some 40 per cent. above that of pre-war years. (*Cries of dissent*). I am sorry that there are still some even in this room who are not prepared to admit the great achievements of this country in the past two years. Capital investment in our industries, and the expansion of many industries which, laid out on a more restrictive basis in the pre-war years, were inadequate to meet the great demands of these challenging times, have proceeded at a rate unparalleled in our history.

"Our industrial production has increased by nearly 20 per cent. over these last two years. (*A Voice : In pounds sterling.*) I am really surprised that our friend who asks this question does not know the answer before he asks it. (*Applause*). If I am asked whether the 20 per cent. is in value or in volume, I can give a simple answer : it is in the physical volume of our national production. In money value it has increased far more. The volume of our exports in these two years has increased by over one-third. (*Cries of "In money" and "By private enterprise."*) One gentleman appears to think that the increase of one-third is by money. That is arrant nonsense ; it has increased by one-third by volume. Secondly, it is said that this is due to private enterprise. I had intended to-night, and I still intend, to make a non-political speech. (*Applause*). These facts are incontestable ; but, if our friends go on helping me, I may derive some little satisfaction by taking up their point and saying that private enterprise has done a great deal better under this Government than it ever did under any other. Since they are so interested in the value of our exports I will deal with that too, because the value of our exports has been running month by month at a rate higher than has ever before been recorded in the trading history of this country. Our increased exports, the sacrifices which we have made in imports, and the development of backward areas in the Commonwealth (*Cries of "Groundnuts" and laughter*)—these things, despite the great difficulties of a year ago, have enabled us greatly to improve

the overseas balance of our payments, as the heartening figures published by the Treasury last night have once again confirmed. (*Cries of dissent*). It seems that, whatever else may be short to-night, the supply of wine has not been restricted !

### *Pride in Achievement*

" The British people—all of them—have a right to look back on those two years with a pride in their achievement. (*Applause.*) It might be tempting, if your members—or most of them, at least—were not practical men, to contemplate what progress we might have expected to make in the years which lie immediately ahead if we had been able to continue with increasing exports, with rising imports, with capital development at home and abroad and with a rising standard of living at home. However, we meet to-night at a time when the efforts which we must make to build up our strength for the defence of peace and for the preservation of our way of life are going to place new and heavy burdens upon our industry. To add, over a period of three years, £1,100,000,000 to our expenditure on defence, to increase greatly our armed forces, to augment by a quarter of a million workers the numbers engaged on defence production—these are burdens which, in a country already fully strained and with, thank God, no reserve of unemployed, inevitably require, if we are to avoid a real reduction in our standard of living, a striking improvement in industrial productivity.

" These defence burdens have to be assumed without slackening for one moment in our drive for increased exports, particularly to the dollar areas and to those parts of the Commonwealth with which our trade must be increased to pay for our essential imports in this new situation. The Government have laid down—and I am sure that it will meet with the approval of all realists in industry—that we must not allow the present situation to interfere with our dollar export drive. Indeed, defence needs will rank in equal priority, but no more than equal priority, with exports to the dollar areas. (*Cries of " Why ? "*) If some of those gentlemen who have come here tonight with open mouths and closed minds will allow me to develop my point, we shall be able to get on. (*Applause.*)

" What these burdens are going to mean will be seen most clearly by those of your members who are, as most of them are, in the engineering industries. Engineering has been in the forefront of our export drive in these post-war years. Engineering exports, which accounted for £115,000,000 in 1938, increased to nearly £400,000,000 in 1947, and have been running this year at an annual rate of over £805,000,000 amounting to nearly 40 per cent. of our total exports. (*Applause.*) The value of our engineering exports—and I say ' value ' this time—has increased sevenfold since 1938, and with some items, and particularly the products of the motorcar

industry, including commercial vehicles and agricultural machinery, our present exports are running at something like ten times the pre-war figure. That has been a great achievement. (*A Voice : "Who did it?"*) It was not done, I think, by some of those gentlemen whose manners are about equal to those of the people who howled down my Rt. Hon. friend the Chancellor of the Exchequer when, some four years ago, he suggested that the motor car industry ought to export half its production. That was then regarded as impossible, but they are now exporting 80 per cent. and doing very well, thank you. (*Applause.*)

#### *Importance of the Commonwealth*

"A great deal of what has been achieved has been achieved in Commonwealth markets. I have emphasised on many occasions how much has been done in this difficult post-war period to increase the rate of capital development in the Commonwealth. The value of our engineering exports to the Commonwealth as a whole has been nearly six times the pre-war rate, whilst the value of capital exports to Colonial territories, on which in my view the future solution of our trade problem so largely rests, has been at a rate of seven times pre-war. Even allowing for the increases in prices, the value of capital goods shipped to the Commonwealth has trebled as compared with pre-war days.

"In the dollar areas too, however, the engineering industry is making a significant contribution. Since the historic Gilpin mission to Canada two years ago, we have seen a great development in our engineering exports to that market—a prosperous and developing market which, as I can confirm from my own observation, and as many others present here to-night can confirm, lies wide open to the British exporter of engineering goods. With these great developments in the exploitation of natural resources, of oil, of iron ore, of hydroelectric power, with the drainage and irrigation projects already planned the demand for capital equipment of all kinds in Canada is virtually limitless at the present time.

"The task facing the British engineering industry is to consolidate and to build up still further our engineering exports while meeting the needs of our defence programme. If ever there was a challenge to which the only answer is increased productivity, it is the challenge which faces British industry today.

"Increased productivity is the main preoccupation of the members of this Institution, drawn as they are from a wide range of industry; for the term "production engineer" might, I think, fail to convey to the outsider that your members are concerned with production layout and production planning in every conceivable industry. Maximum production requires to be engineered, in the best and widest sense of that term. Our American friends—and

I am glad to see them represented here to-night (*Applause*)—have long been aware that production is a science or an art in itself. We have not ourselves moved as fast as they have. The scope for standardisation, because of our smaller and more diverse markets, and perhaps through the undue development of non-standard types and sizes of product, has been much less in this country than in the U.S.A. We have, and in my view rightly, concentrated much more on crafts and quality products; and let us, in our drive for increased production, never forget that if we acquiesce in any loss of craftsmanship or quality Britain is finished as an industrial nation. (*Applause*).

“However, in our present situation, with our need to export more and more, and with growing competition in world markets not only from the United States and other areas but also from resurgent German and Japanese production, our markets, our standard of living and indeed our survival are going to depend on our achieving maximum efficiency in the means of production. This was stated with the greatest authority in one of the reports of the Anglo-American Council on Productivity, whose Joint Chairmen, Mr. Lincoln Evans and Sir Frederick Bain, we are glad to see among the guests to-night. (*Applause*). The report on Drop Forging began its findings with these words, which I quote because I think that they are capable of far wider application:—

“‘Having seen the benefits of high productivity in the high standard of living in the United States, and recognising the changed circumstances in Britain resulting from the war, the team is convinced that high productivity is vital to us as a nation in order to maintain the present standard of living, and doubly vital if the standard is to be improved. Any alternative involves the acceptance of decreasing markets for our industrial products, deterioration in our standards of living together with unemployment and all its attendant miseries . . . unless all parties (the trade association, the employers’ organisation, which can spread the gospel of productivity with all its advantages to managers, technicians and workers, the trade unions) are prepared to co-operate to the full, high productivity will not be achieved. High productivity must be achieved now, not in years to come; it will be too late in years to come. Our present economic plight calls for co-operative thinking by all concerned, for we swim or sink together and this is not the time for petty jealousies and bickering.’

“If that quotation from one of these statesmanlike industrial reports was true when it was signed eight months ago, how much more true is it to-day, with the additional burden now facing the country? (*Applause*).



*Higher Production and cost of Living*

"Higher production is essential to our exports, and it is no less essential to our standard of living at home. The high and growing costs of our imported materials—because the cost of our imported materials is growing—brings in a wide range of industries the danger of pricing our goods out of the home market. There is no greater problem with which our people are faced to-day than the problem of the cost of living, because unless increased productivity and the maximum elimination of waste in production can bring down our costs, we are in danger of entering upon a period of rationing by price, which, as so many of our people have had good reason to know in the past, imposes severities, harshnesses and suffering greater than any rationing system based upon coupons and shortages.

"British industry has suffered too much in the past from a restricted market based on too few goods being produced at too high prices. Our raw material prices are high to-day because world prices are high. (*Cries of "Government control."*) As a matter of fact, of all our raw material prices the cost of imported raw wool has risen far more than that of anything else, far more than that of raw cotton, for example, and raw wool has been on a free market since 1946. (*Confused interruptions.*) I can only give our rather noisy minority or friends the facts; I cannot give them good manners, or the intelligence with which to understand the facts. I will ask them to study the facts objectively, and to recognise, because we must as a nation recognise, that this is one of our biggest problems. World prices are going against us at the present time, and they are going against us equally in those goods which are bought by private means and those acquired by public purchase. It is no use trying to indulge in cheap political cracks; we have to face the facts, and to recognise that our raw material prices are high because world prices are high.

"Let us recognise, as I know that your members do recognise, that labour is scarce, and is more expensive than it used to be. Do not let anyone delude himself into thinking that our problems could be or should be made more easy by reducing the reward of labour. (*Applause.*) Indeed, as every visitor from these shores to the United States has recorded, the high standard of productivity in the U.S.A. is based upon the fact that labour is expensive. Therefore, with materials and with labour no longer in easy or cheap supply, the challenge to management is to make the fullest and most economic use of both.

"These problems are not the problems of our hour, and they are not the problems of a year or two; they are the problems, I believe, of a generation, or possibly of many generations to come. Full employment and the full mobilization of the nation's resources in

the interests of the nation will be, I trust, a categorical imperative of economic and political life for as long as any of us can see ahead. Our problems are not to be regarded merely in terms of the needs of our own people alone. We have a responsibility to the world, and not least to those areas whose political destinies are in our own keeping ; nor in the long run can we hope to solve our own problems, or to maintain markets for our own products, without a great development in the producing and consuming power of the backward areas of the world. (*Applause.*)

#### *Problems of Food Production*

"Before the war, half the world's population, one thousand million people, could not extract from the soil sufficient food to maintain an elementary standard of health. (*A Voice : "That is absolutely inaccurate."*) I can only refer those who dissent to the published and agreed reports of the United Nations, agreed by the experts of sixty nations. If they choose to pit their views against the knowledge of sixty nations, I will leave you to decide who is likely to be right ! In food production, in the provision of consumer goods, in the development of basic services and generally in the industrial development of vast areas of the world's surface lies the task of our new generation. Production engineers, better than anyone else, are fitted, I think, to appreciate the vast potential of producing and consuming power still unrealised in the world, when they look at the simplest indices of industrial development in some of these areas.

"Within the British Commonwealth—and even more striking contrasts could be found outside—we find that electricity production in terms of kilowatt-hours per unit of population is 117 in Malaya, 13 in India, less than 10 in Ceylon and less than 2 in Pakistan, against over 1,000 in the United Kingdom and nearly 2,300 in the U.S.A. (*Cries of "What is it in Whitehall ?" and "What about gas ?" and laughter.*) I must confess that I have had far more expert heckling from some of the young Conservatives in the last General Election ; at least they were able to read page 4 of the Conservative Central Office heckling sheet rather better than some of our friends to-night. Steel consumption (*Cries of derision*)—steel production is a function of consumption, and how big a market was there for the steel industry when some of you people had charge of it before the war ? (*Laughter.*) Steel consumption is 16 tons per thousand of the population in Malaya, 4 in India, 6 in Ceylon, less than 1½ in Pakistan, against 194 in this country and 364 in the United States. (*A Voice : "We are in England."*) Of course we are in England. I hope that some of our not so dumb friends will realise that the long-term market for the products of our industry is going to depend on the development of the consuming power of these countries throughout the world.

"In the long term, the increased productivity of which this country is capable cannot be better used than in the development of these areas, which will provide both an outlet for our production and a new and necessary source of supply. This, I believe, is Britain's mission in the twentieth century. (*Applause.*) It is a mission not only economic and material in its character but political and spiritual as well; because in the rapid advance of these great under-developed areas of the world lies our surest means of checking the spread of Communism and the other evil creeds which breed in conditions of poverty and of hunger. (*Applause.*)

"Those, therefore, who are concerned throughout our industry, as you are, with the development and engineering of production are taking their place not only in fighting the problems which are inseparable from world recovery and the defence of our way of life against the danger of aggression, but also in building up the standard of living of an entire world, and in creating the conditions in which alone peace and material progress can be achieved. It is in that spirit that I am going to ask you to join with me in drinking the health of the Institution of Production Engineers.

"I couple with the toast the health of your President to-night. (*Applause.*) There are many things that I could say about your President, because I know him well and have known him for many years. There are many things which you would want me to say. I will, however, say only this to-night, that in your President you have selected someone who, politics apart, commands the support and the confidence of those in all political parties and on all sides of industry. (*Applause.*) Over the years, he has brought to the successive problems with which he has been concerned a mind which is finely tempered and fertile in imagination, but imagination based on long and profound experience, at all times infused with a broad humanity, which shows itself in all his dealings. I therefore ask my fellow guests to join with me in drinking the toast of the Institution of Production Engineers, and to couple with it the name of my friend and our friend Ken Appleyard, your President." (*Applause.*)

#### RESPONSE BY THE PRESIDENT

The PRESIDENT, who was greeted with applause, said in reply: "This is one of the pleasant occasions—at least, I thought it was—when, whatever our politics, whether we are for or agin the Government, we should all be united in our pleasure at having with us the President of the Board of Trade. (*Applause.*) We are indeed honoured that the holder of one of the great offices of State, with the great responsibilities which he carries, should find time, especially in a difficult week like this, to come here and join us in what we hope is a very pleasant occasion, and also devote the time to preparing an address which the thoughtful ones among us, who

quite clearly comprise the bulk of the people present, will read and read again and appreciate and value.

"I have known Mr. Wilson, as he said, for a number of years. I have seen him at work in more than one important ministerial office, and I can only tell you that in my experience—and it is a fairly close one—no man could try more than he tries to do his best for British trade, and more particularly the export trade of Britain. (*Applause.*) I hope that those of you—a very small number—who did not know better than to interrupt a guest of honour will accept from me as a personal experience that opinion. (*Applause.*) Incidentally, he has a very remarkable memory. If any of you desire to indulge in conduct which you would not like to have remembered against you in years to come, my advice to you is to do it when he is not about. He remembers not only the occasion, the date and the time but, it may be, the number of the room and the name of the girl. (*Laughter.*)

"Speeches are a little like babies; they are easy to conceive but hard to deliver. (*Laughter.*) For me, this works the wrong way on; I have had to reply to this toast on many occasions, and I know that I shall have to do so many more times in the future, and I can think of very little else to say about this Institution than I have already said. I was going to say something about its work, its health and its hopes; but time is going on and there are other speeches to follow, so that I shall cut a great deal of that out, particularly because, apart from our guests, I expect that you all know it.

#### *The Great Work of Past Presidents*

"One thing, however, I do want to say. It is said to be a sign of advancing age to look back. It may be so, but I often think that the good work done by men in the past is not kept sufficiently green in our memories. In looking through the list of the great predecessors who have held the honourable office which I now hold, I feel that their work is not sufficiently remembered in the hustle and bustle of dealing with the problems of today. I think of Lord Austin, Sir Alfred Herbert, Sir Ernest Lemon, and the Past-Presidents who are with us tonight. All in their turn have done very fine work for this Institution. (*Applause.*) Among them all it seems to me, looking at the history of the Institution, that the name of Lord Nuffield stands out very high indeed. (*Applause.*) Not only was he for two years the energetic President of the Institution, but with great generosity, at a time when we needed it badly, he bestowed upon the Institution a financial endowment and enabled it to purchase the headquarters which it occupies to-day. That was a great and vital gesture at a time when the Institution needed such support. I take the liberty, in the name of all the members of the

Institution here to-day, to send to Lord Nuffield a telegram telling him that we are gathered together here and that we remember all that he did for our Institution. (*Applause.*)

"I have sixteen pages of notes in front of me, but do not worry ; I am not going to go through them all. (*Laughter.*) To those of you who listened to and were able to hear Mr. Wilson, it is quite clear that this Institution is coming to maturity at a very important time. It exists for the purpose of promoting the development of science, techniques and practice which are designed to ensure the maximum output from the minimum necessary human effort in the production industries, and to eliminate waste in any form, whether in time, material or man-power.

"We have some eight thousand members spread all over the Commonwealth and the countries associated with it. It is a great pleasure to see, in looking at the statistics of the increasing membership over the last year or so, that out of the first five Sections India represents two and Melbourne one ; three out of the first five come from nations overseas. I admit that these are statistics and based on a percentage calculation, and you know what a percentage calculation is : it is used by politicians and chairmen and all kinds of people who say that they are delighted to be able to inform the House or the board or the shareholders that "in the light of our enormous capital expenditure over the last year or two years, our output of"—I shall have to be careful about this—"chicken feed will be increased 50 per cent.—by volume." (*Laughter.*)

"One thing which pleases us immensely is that during the year we have formed a very welcome link with the Corps of Royal Electrical and Mechanical Engineers. (*Applause.*) We have been able to welcome them not only to our Summer School but also in membership. The responsibilities of this great Corps all over the world are such that we have the greatest hopes that, as time goes on, we shall be able to hear from the officers of that Corps something of their experience in the development of the techniques of maintaining the mechanical equipment of the Army. There are few more important tasks in the Army than that. We offer the most cordial possible welcome to the members of that Corps who are with us to-night, and indeed to all its members.

#### *Educational Developments*

"I could go at some length into our work in regard to education. We have been able during the past year, with the assistance of the universities and the technical colleges, to enlarge this very considerably. We are also engaged in research. This Institution was largely responsible for the creation of the Production Engineering Research Association. Nowadays it is supported by industry and by the Government. I understood from Mr. Strauss the other day

that this year the Government—the Government being the taxpayer, of course—will put up £30,000 for research in production engineering. On the application side, our own Research Committee is engaged in several extremely interesting branches of work, more particularly, perhaps, that of the measurement of productivity—in which we have been unable to interest the Ministry of Supply very much—and also research into the subject of mechanical and material handling, which is a most important matter to all production engineering industries.

“We owe thanks to very many people for their support of and interest in our work. I could give a list of them, but I have a feeling that Mr. Puckey, who is sitting opposite me at the other table, is going to say something to you about this in welcoming those of our guests who have been most forward in helping us.

“I do not believe that in our industrial production we have a great deal of which we need be ashamed. I think that you will share that feeling if you study the situation of our industries over the last thirty years, including a couple of wars and the intervening years of upset and difficulties, with the difficulty of providing fresh capital at a time when markets are very bad. I do not believe, in all the circumstances, that there is much for which we need blush. I say that with the more feeling because during those difficult years I was responsible for a great deal of industry in what was then called a depressed area, and I had these very problems to face the whole time—no markets, no sales, everything dropping and no possibility of getting capital to do the refurbishing which one would like to have done.

“As far as our modern industries are concerned, the new ones, I do not believe that our production per man-hour in many of them is less than can be shown by the United States or in any other country. The older industries have their own difficulties. Capital expenditure on reconstruction in those industries costs three, four and five times as much as it would have done fifteen years ago. The new ones, I think, can stand on their own feet and look the world in the eye, and can say that they have done a good job. That is because they have had first-class leadership. If you could do as I do, and visit some of the successful companies in this country and study why they are successful, you would find that it was because the chaps at the top are good chaps. They understand their men; they are good leaders, and the result is that they achieve a low cost of production, and can produce goods for the export trade at costs which the rest of the world can afford to meet.

#### *Shortage of Trained Production Engineers*

“It must be confessed that, so far as production engineers are concerned, this country is shorter of trained men of this type than

is the U.S.A. High wages and high standards of living forced the United States to pay great attention to production problems at an earlier stage than was the case in this country, but today everything in our economic situation is forcing us to consider the education and training and use of production engineers. At present, however, engineers who have had a basic training as mechanical, electrical or civil engineers, and who added to that have had technical training and experience in planning and production of any kind of material that requires to be manufactured, are scarce.

"Do not let anybody imagine that on account of our great need we are going to get supplies of these highly trained men quickly. It is a long job. No man can absorb the necessary technical training and provide himself with the necessary human equipment to make himself a competent professional production man inside the next two or three years. This new profession must grow by taking in the younger men; they are the men of the future. As a matter of fact, I cannot see any old men here at all, but there must be some (*Laughter*), and I would say to them that they are not the production engineers of the future; the younger men are the production engineers of the future.

"However, in the heads of a great many of the older men in industry there is a vast amount of experience, a tremendous amount of success, which would be of interest to the younger men who are the men of the future in this country. I wish that more of the older men could be persuaded to put on paper an account of the way in which they have achieved their success, and the things that they have done, so that the younger men could learn from the experience of their elders. I have said many times, and I want to say again, that we ought to study the experience of every man of quality in any manufacturing field who has successfully overcome the problems of the elimination of waste and the elimination of effort, and who has multiplied the output per man-hour. We want to study the experience of men who have made two blades of grass—or, to be statistical, let us say 1.16 blades of grass (*Laughter*)—grow, as a result of their efforts, where only one miserable blade of grass grew before.

"I believe, too, that in the circumstances of to-day no man who achieves success in our field should imagine that his obligations to his country are discharged if he withholds that experience from the younger men who will follow him. He should not feel that his duty has been done unless he takes a hand in giving to the younger men opportunities to learn what he has learned.

"There are many industries with fine records which are not represented in our membership. We seem to be tied to mechanical engineering and electrical engineering and so forth, but if we look round at the other industries, the consumer industries and so on,



great success must have been achieved in organising, planning, packaging, standardisation, mechanical handling and so on about which we ought to know. I doubt whether any man can study another industry and see how it works and see its successes without deriving something in the way of inspiration for his own efforts.

"The efficient production engineer should have an ability to analyse problems and come to his own decisions, and he should have a determination to solve his problems. Those are qualities which you do find in the production engineer, and I should like to see them on the sales side as well. I have been abroad a good deal in the last four years, and I think that if some of the gentlemen who control companies were to have a look at their sales departments in other countries they would have a shock. (*Applause.*) There are the old stories of cabled inquiries coming home, and long lists of silly questions going back by sea post, by which time the Americans or the Germans or the Japanese have got the order. I can tell you a true story in that connection. There was a man who wrote to San Francisco to ask for assistance in finding an agent. He said: 'I have a stock of 22,000 surplus lavatory chains which I have been unable to sell in England, and I am told that a large market might exist for them in the backward parts of the U.S.A., such as California.' (*Laughter.*) I assure you that is absolutely true, but I do not say that this kind of thing is universal; it is not, for otherwise Mr. Wilson could not give us the figures which he has given to us tonight; but it is rampant among many of the people who try to sell abroad.

"An Institution is worth no more than the people in it, their enterprise and the efforts which they make to improve the standard of knowledge of their fellows. We think in this Institution that in spite of our youth we are not too bad. I have touched on a few subjects which I believe should be of the greatest interest to the great industrialists who are present this evening, men who feel keenly their responsibility to their own concerns and to our country—and our country means something in the world today. These men realise that our future lies with the young chaps who are being trained. We look to ourselves and to those friends for our possibilities of advance in our own sciences and techniques. We do not look to the Government for anything but friendship. Tonight we have had evidence that we have that friendship, and indeed Mr. Wilson is the second Minister in one week who has been the guest of this Institution. We are told that a pat on the back makes for character if it is delivered early enough and often enough and low enough. (*Laughter.*) Mr. Wilson's pat has come when we are young. Some people seem to have thought that it was quite low enough. All of us hope that he will revisit us often enough. (*Applause.*) He has given us encouragement to-night, and on behalf of all of us I offer



him our warmest thanks for coming here and for giving us such a very fine address, and I thank him very warmly indeed for his toast." (*Applause.*)

### PRESENTATION OF AWARDS

The PRESIDENT : "In one or two American Institutions it is a happy practice on the occasion of the Annual Dinner to present to the younger men the marks of distinction which the Institution has conferred upon them, in order that the distinguished guests may see them and give them their approbation. That is what we are going to do to-night."

The following awards were then presented by the President, the recipients shaking hands with the President and with the President of the Board of Trade :—

The Institution Medal for the Best Paper presented by a Non-Member during the year 1948-49 to Mr. R. F. Tylecote, for his paper entitled "Pressure Welding".

The Institution Medal for the Best Paper presented by a Member during the year 1948-49, and the Hutchinson Memorial Award for the Best Paper presented by a Graduate during the year 1948-49, to Mr. Peter Spear, Grad.I.Prod.E., for his paper entitled "The Generation of Fine Finishes by Machining Techniques."

The Schofield Travel Scholarships, 1950, to the two winners, Mr. B. E. Stokes, Grad.I.Prod.E., and Mr. W. N. Aspinall, Grad.I.Prod.E.

The Lord Austin Prize, 1949, for the best Essay by a Graduate, to Mr. E. R. Unitt, Grad.I.Prod.E., for his essay entitled "The Production of Screw Threads by the Grinding Method."

A Certificate of Merit to Mr. H. G. Bottomley, Grad.I.Prod.E., for his Essay entitled "Recent Developments of Production Grinding Machines."

### "THE GUESTS"

MR. WALTER C. PUCKEY, Chairman of Council of the Institution, who proposed the toast of "The Guests," said : "It is said that a man is judged by the company he keeps, and when I look at the many distinguished guests here I am sure you will forgive me if I say that the quality of the Institution must be very high. I suffer from the usual difficulties in proposing the toast of our guests, and I shall have the usual trouble in overcoming them. What, after all, is a guest? I have a simple definition : one who gets things without paying. (*Laughter.*) Of course, if he makes a speech he more than repays us for our hospitality.

"One difficulty peculiar to us to-night is that we have many guests who are really disguised members ; they come here in other capacities, and as such, presumably, they get in free. That is a

very good thing for members of the Institution who are willing to take on other jobs, but it looks as if we might reach the stage very soon when very few people will pay at all, though we shall have a large membership! (*Laughter.*) I can mention very few of our guests by name, but I want to assure them all that I convey a warm welcome to each one of them. First of all, I must mention our chief guest, Mr. Harold Wilson, the President of the Board of Trade. (*Applause.*) I feel sure that the air here this evening is not quite so invigorating as at Margate (*Laughter*), but I am also sure that Mr. Wilson will agree that the company is equally invigorating; at least, I hope so. There is very little I can add to what our President has said about Mr. Wilson. It only remains for me to say, on behalf of the Institution, that I am very glad and proud indeed that we have the active support of the President of the Board of Trade, that very great Ministry which one can say literally has a finger in every industrial enterprise. Perhaps, on reflection, that might more appropriately apply to his colleague the Chancellor of the Exchequer, though in that case the finger might represent a fist. (*Laughter.*)

#### *Friends from Overseas*

"I am particularly glad to welcome here some friends from overseas—some of them members, and all of them friends. I want especially to welcome His Excellency Krishna Menon, the High Commissioner for India (*Applause*). Both he and you will be very glad to know of the rapid progress which our Institution is making in that country. I also particularly want to welcome our guests here from the United States of America, and here I would mention first Mr. Barry Benson, the U.S. Commercial Attaché. (*Applause.*) We also have visitors from America representing the E.C.A., that great agency which has done so much for the rehabilitation of the world, including this country. It was said recently that the Americans are famed for their hospitality, and that the British are equally famed for accepting it. (*Laughter.*) Our very small gesture this evening is perhaps some little token on our side to repay the hospitality which many of us have experienced over there. To our American friends I would say that we hope in due course to repay them also for their very great generosity in letting us have the benefit of all the techniques at their disposal. I think that before long our friends in America will find that we production engineers in this country will be able to show them a few things. I hope that time will come very quickly, and I believe that when it does they will be equally glad to take notice of it.

"We must never forget that we exist for the benefit of industry. We rely on industry for the expansion and utilisation of knowledge. The policy of our Council is to encourage true production engineer-

ing in an ever-widening section of British industry. I am therefore very glad indeed to welcome here distinguished guests from such a wide range of industry. I wish that I could welcome them all by name, but if I mention a few internationally famous names it will convince you that perhaps their interest in the Institution is some measure of the wide interest which the Institution has in industry today. I would mention particularly Sir Harry Railing, Chairman of that great Company, General Electric ; Mr. Wates, Chairman of Johnson & Phillips and this year's Chairman of B.E.A.M.A. ; Sir Malcolm McAlpine, Director of Sir Robert McAlpine & Sons ; Mr. Westall, Chairman of Thomas De La Rue and Company ; Mr. Scotcher, Chairman of Lipton's ; and Mr. Philip Lyle, of Tate & Lyle. (*Applause.*)

#### *Co-operation with Other Bodies*

"We are a professional Institution, devoted to technological progress for the benefit of our members, of industry and of the community. We stand aloof from politics. When I thought of saying that, I had not heard some of the interruptions which we have had this evening, but as an Institution we do stand aloof from politics. We stand aloof from the arguments and controversies between employers and unions as such. We respect all ; we are subservient to none. We are always willing to give assistance to the utmost of our ability. We salute, and we desire collaboration with, our sister Institutions. Some of them are further along the road than we have yet travelled, and some of them, represented in this room, are young and full of vigour. I would mention particularly such a new body as the Institute of Industrial Supervisors, represented by our old friend Sir Percy Mills. We are also, on the managerial side, very glad to welcome Sir Charles Renold and his colleagues from the British Institute of Management. I would particularly mention also Mr. Robson, President of the Institute of Cost and Works Accountants. You all know that we are working most actively with that Institute on studies of the measurement of productivity, and Mr. Wilson will be very glad to know that, in all the studies which we are making on the measurement of productivity, we pay regard to the cost all the time.

"The Institution has naturally taken a very great interest in education over many years. This year, for example, it is significant that we are launching our Associate Membership examination. In other words this is a very significant educational year for the Institution. We therefore welcome all our friends, and there are many here, from the sphere of education. We are very glad to welcome Mr. Hyslop and Dr. Abbott from the Ministry of Education, with whom we work very closely. We welcome many principals and teachers from technical institutions, including Dr. Docherty,

Principal Gibson, Principal Wilson, Principal Jones and others and, on rather a different line, the Principal of the Administrative Staff College at Henley-on-Thames, Principal Hall.

"I heard someone yesterday saying that it was perhaps regrettable that today we were having rather more education, whereas yesterday we had rather more wisdom. While to a certain extent that may be true, I believe that in our educational work in the Institution we are trying to place a sound educational edifice on a basis of wisdom.

*Anglo-American Productivity Council*

"I should like to mention one other great enterprise known to everyone in this room, the Anglo-American Productivity Council. I am more than glad to be able to say that we have representatives here of a very high order indeed from that great international body. We have Sir Frederick Bain and Mr. Lincoln Evans, who are Joint Chairmen, and Sir Thomas Hutton, the General Manager. We are very glad to see them; I believe that they are doing a great work for which industry is and will be grateful to them. (*Applause.*) The reports which result from the work of this body give us a great opportunity to get down to the practical work of providing a platform for the dissemination of the knowledge contained in them and, what is even more important, translating it into practical reality. If we do only a quarter of the work which has been put in front of us in this way we shall have a very full programme and, as Sir Frederick Bain knows, we are willingly providing a platform for the dissemination of many of these reports as they are published.

"This leads me logically to my respected colleagues on the Dollar Export Board, headed this evening by Sir Cecil Weir, the Chairman and Chief Executive. (*Applause.*) I should like to say from personal knowledge that the country has every reason to be grateful to Sir Cecil Weir for the wonderful job of work which he is doing in building up our dollar exports. I am sure that Mr. Wilson shares with me a feeling of pleasure at having Sir Cecil at our table. I think that Sir Cecil himself would be the first to agree that much still remains to be done in this great field of exporting to the dollar countries. Production engineers have a very great task indeed in making certain that we stand fully in the van in our responsibility for promoting dollar exports. Others share that point of view. We have to convince the United States that we have much of value to offer to them. A few weeks ago I was standing in the usual immigration queue at Northolt Airport, and a young American who was in front of me was asked by the immigration officer whether he had any money to declare, and replied, "No, I only have British pounds." (*Laughter.*)

*Trade and Research Associations*

"We have representatives here this evening from many great trade and research associations. I am particularly glad to see Sir Ben Lockspeiser, of the Department of Scientific and Industrial Research, and Sir Lionel Kearns, who is one of our members but who is here this evening as Chairman of P.E.R.A., an offshoot of the Institution of Production Engineers. (*Applause.*) I am also very glad to welcome Mr. Gabriel, the President, and Mr. Morgan, the Secretary, of the Machine Tool Trades Association. I am glad that they have been able to take time off from making their Eastern orders go West. (*Laughter.*) Those of us who were privileged to see the magnificent display of British machine tools recently have every reason to be grateful to those who organised it.

"During the year, as our President has told you, we have collaborated very closely with certain sections of the Army. That is very different from the position in the early days of the war, when the first motion study experts went to the Army to see what they could do. One of them decided that the first problem to study would be the firing of a field gun. It took him a long time to discover why when the gun was fired a certain man stood in a certain spot with apparently nothing to do at all, but in the end he found that that was where the horse used to stand. (*Laughter.*) Those of us who are associated with R.E.M.E. at the present time realise that they have travelled a long way since those days.

*The Press*

"We are also glad to welcome our many Press friends. I fully appreciate that production engineering is not a popular lay subject, and is not something which is news in the sense that it is in America. Perhaps you could make it news and create greater lay interest in it. I should like to put that point of view to our friends of the Press. I believe that one of the reasons why in America production engineering has achieved much greater prominence than it has here is that it is news to the lay person in America to a much greater extent than in this country.

"I cannot close without reference to our scholarship and prize winners, and without offering a particular welcome to Mr. Stokes and Mr. Aspinall, our Schofield Scholarship winners, who have returned from a most successful study tour in the U.S.A.

"Finally, I want to refer to Sir Frederick Bain, a most distinguished man in industry and a very distinguished man in many spheres. It is quite a coincidence that the last time that he and I sat at a festive table was when at Merthyr he replied to the toast of the guests at the official opening of one of my company's factories. He is Deputy Chairman of that vast enterprise, I.C.I., and he has recently been Chairman of the F.B.I. He is Joint Chairman of the Anglo-

American Council on Productivity. That is an impressive record of public service. (*Applause.*) On behalf of the members of the Institution I once again assure our guests that they are more than welcome this evening, and I ask the members to rise and drink the toast of our guests, coupling with the toast the name of Sir Frederick Bain." (*Applause.*)

#### RESPONSE BY SIR FREDERICK BAIN, M.C.

SIR FREDERICK BAIN, M.C., responding, said :—

"I think that Mr. Puckey will admit that at this time of the night, and having listened to a selection of the names of the guests present, it is a formidable task to get up to reply and attempt to say anything at all. There was a great deal that I had intended to say, because I think a great deal of the Institution of Production Engineers, but I am going to confine myself to one or two points from what would have been a very good speech. (*Laughter.*)

"First of all, I come back to the nature of the task of replying for the guests. My first duty is, on behalf of all of them, to thank this Institution for a very wonderful evening and very wonderful hospitality. I cannot attempt to reply for such a distinguished body. Mr. Harold Wilson needs no defender, but "from the other side of the House" I should like to say this about him, though I have no use at all for his politics. (*Laughter.*) Harold Wilson has been consistently, to my knowledge, in a responsible position representing British industry, a man of courage, as he has shown us to-night. (*Applause.*) He has been one of the most hard-working Presidents of the Board of Trade that I, in my long experience of British industry, have ever known. Above all, he is—and here he and I think alike—the only Minister in this Government who has no use for controls. (*Laughter and Applause.*)

#### *Tribute to the Institution*

"As an industrialist myself—not an engineer, but representing general industry—I should like to pay a tribute to the work which you engineers are doing, and to the new direction which you who are members of this Institution are giving to the activities of engineers in regard to production, adding that to the ordinary development and design work of the engineer. As production engineers, you have the biggest responsibility of anybody I know. We industrialists have our responsibilities, and we are responsible for seeing that we make good use of production engineering. It is also our responsibility, and the responsibility of many others of your guests here, to see that we produce more production engineers.

"I am referred to in the toast list as a Joint Chairman of the Anglo-American Council on Productivity. I am sorry that my fellow Joint Chairman, Mr. Lincoln Evans, of the T.U.C., has had

to go, but he has asked me to speak on his behalf. I can assure you that as an industrialist I have found the greatest satisfaction which I have ever had in being Joint Chairman of the Anglo-American Council on Productivity and in co-operating and working closely with industrial and trade union leaders, and particularly with Mr. Lincoln Evans as Joint Chairman. (*Applause.*)

"In another place to which Mr. Puckey has referred, and where apparently he thinks that the air is more exhilarating, I gather that the Prime Minister has said that we have lost confidence in capitalism. I should like, quoting the words of a member of his party of whom we hear much less than we used to do, to say that it all depends on what you mean by capitalism. Industry has not lost its confidence. Industry in Britain today has the confidence to go ahead and take full advantage of the great generosity of American industry in learning what can be learnt in America, but it also has the confidence to tell American industry some of the things that we can teach them. We have the confidence which is essential to-day, at this moment of great crisis in the history of civilisation. At this time I believe that we in industry are probably ahead of the Government of which Mr. Wilson is a distinguished member in our realisation of the gravity of the situation and of what can be and must be done.

#### *A Great Task*

"In my opinion, you gentlemen who are members of the Institution of Production Engineers have a great task before you. Not only have you to get greater production and practical results in that way, but you have a missionary job to do. My conception of British industry is that it is a living organism. Dr. Johnson, in writing of the bravery of the British soldier, said that there never was such a bad soldier or one with such bad discipline as the British soldier, but that the British Army was unbeatable, because its members had the common object of preserving the freedom of their country and their own freedom, and then they acted as one. That is what industry must be prepared to do. According to the Press this morning, someone has said that Britain is bust. How can anyone say that? We may have our difficulties, and we may be taxed out of existence—as we are (*Laughter*)—but when the real test comes we shall not be found wanting. We all desire the welfare State, but that is not the most important thing that we want; what we all desire and what we shall achieve is a free State. (*Applause.*)

"The time has come to stop. As an industrialist, let me say how much I welcome the evidences of vitality and youth in your Institution, and how proud I am to be here to thank you for your hospitality and to wish you God-speed." (*Applause.*)

The proceedings then terminated.



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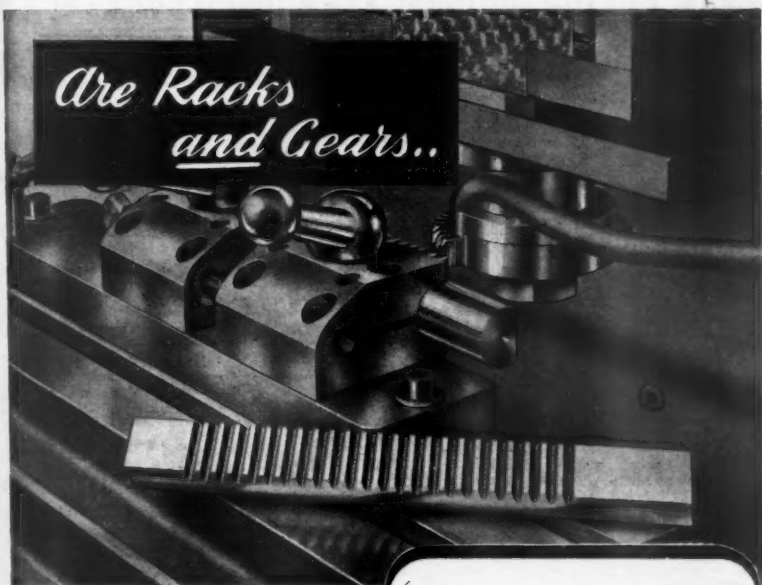
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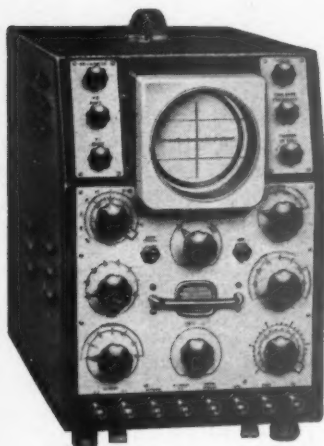
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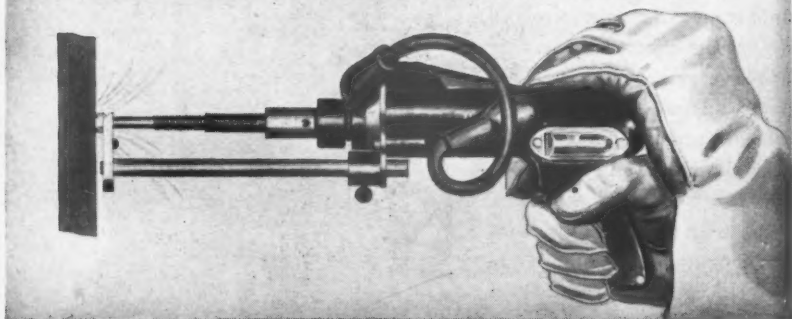
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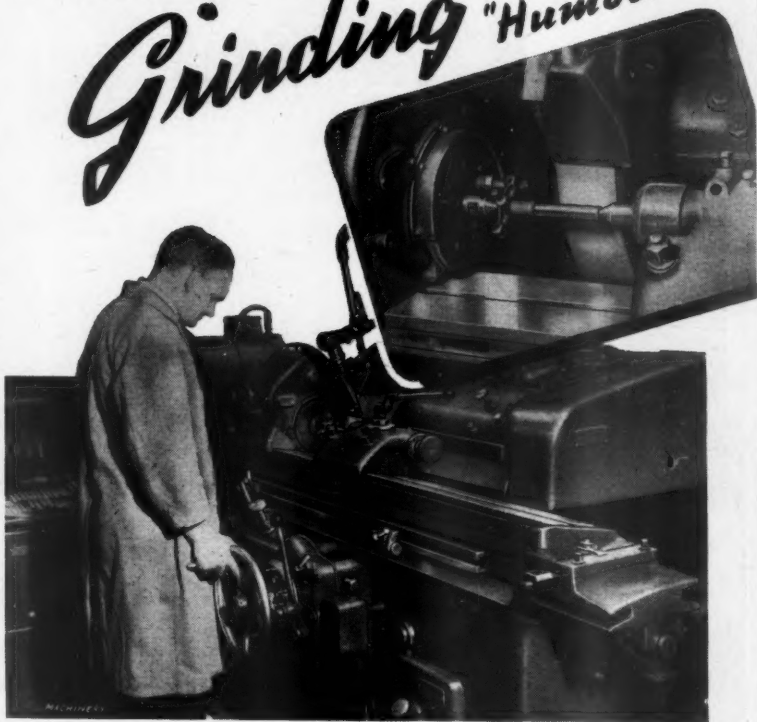
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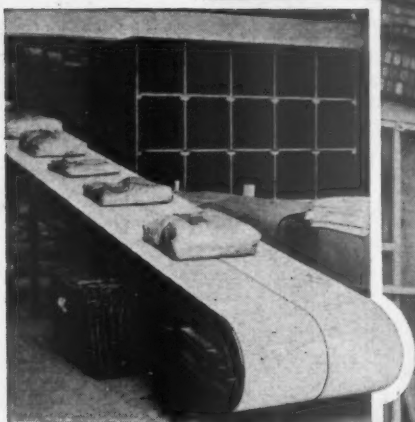
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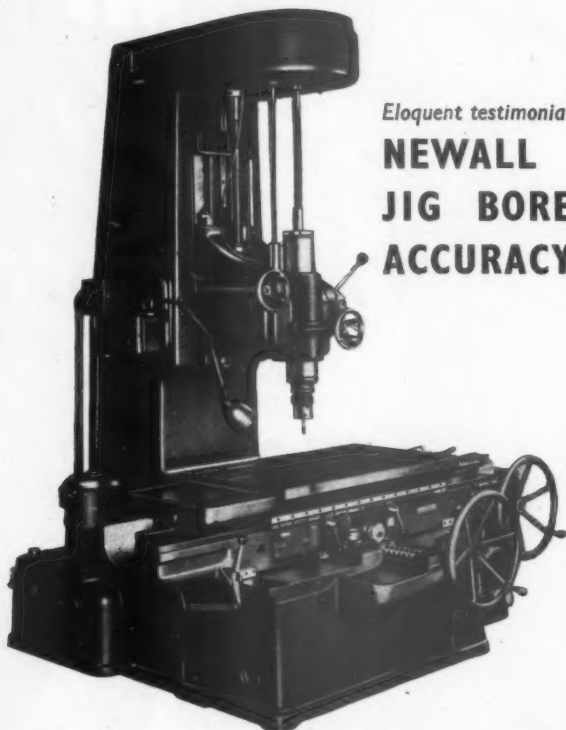
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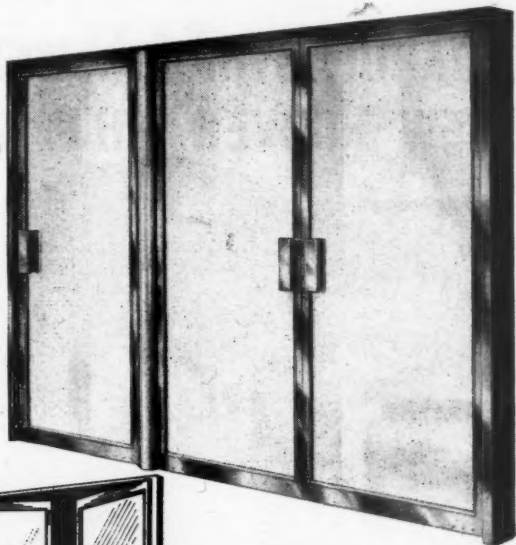
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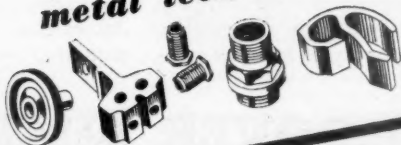
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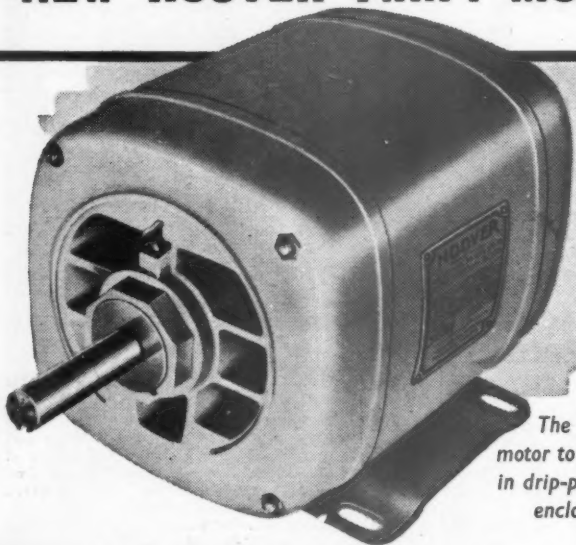
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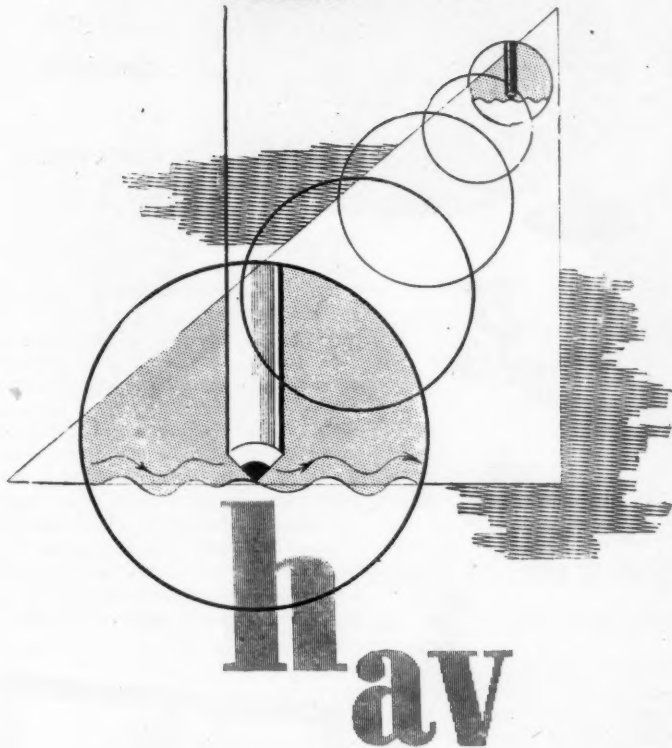
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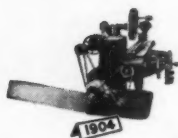
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**WHEN  
GRANDPA  
WAS  
INDENTURED**

**T**here are old engineers alive to-day (although, we hope, in happy retirement) who were apprentices sixty years ago, and who can probably recall the first type of cutter grinder made by Cincinnati in 1889. From that early date Cutter Grinder development has had to keep pace with every extension of machine tool practice which, as all know, never stands still for long. Closer and closer limits; the introduction of new methods and materials; the ever-widening scope of machine tool work has called for refinements and even revolutions in Cutter and Tool Grinding, so that the cutter grinder of to-day bears little resemblance except in fundamental operation, to the original model produced in 1889.

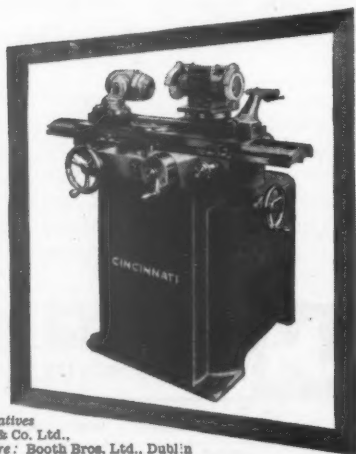


Because of their intimate association with machine tool development, Cincinnati have a unique record in cutter grinder design, too, and the modern Cincinnati Cutter and Tool Grinder brings to the skilled operator a tool of high precision and reliability.



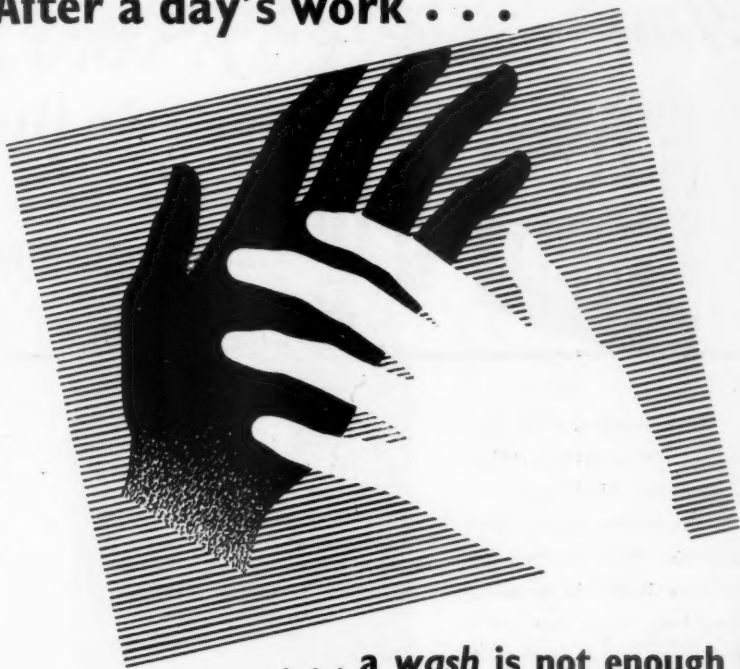
## **CINCINNATI CUTTER GRINDER**

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for Gt. Britain & N. Ireland: Charles Churchill & Co. Ltd.,  
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*A booklet, entitled "Control and prevention of Industrial Dermatitis," will be sent free to those in industry applying to Alexander Duckham & Co., Ltd., 346, Kensington High Street, London, W.14.*



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# BARBER-COLMAN NO 8-10 *Vertical* HOBGING MACHINE

This machine, which has a capacity of 8" diameter by 10" long and an outstandingly rugged construction, is designed for high speed production of spur or helical gears or splines. Rigid arch-type casting, extra long vertical ways, which align the work slide, heavy short-coupled drive shafts and broad faced helical and bevel gearing, provide smooth powerful operation and minimum distortion of machine members even under the heaviest cuts. This extra-heavy structure plus accurate mounting of the hob



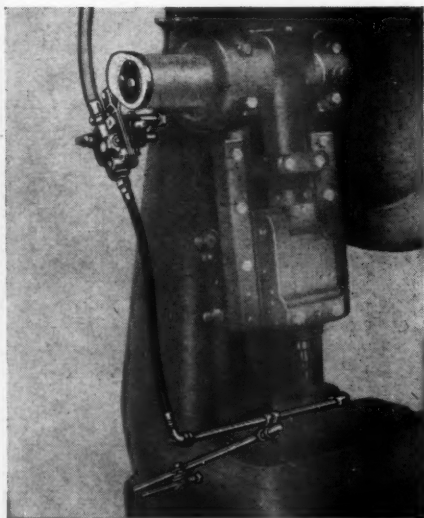
on the taper hob spindle, ensures consistent accuracy while the machine maintains a high output, even through day-in day-out operation. Effortless control is provided by the handy centralised panel, from which a lever sets in motion the machine's semi-automatic cycle. A simple selector regulates the 8—10 to either climb or conventional cutting. Increases in hob life ranging up to 50% are achieved by fitting the new Barber-Colman 8—10 Hob Shifter.

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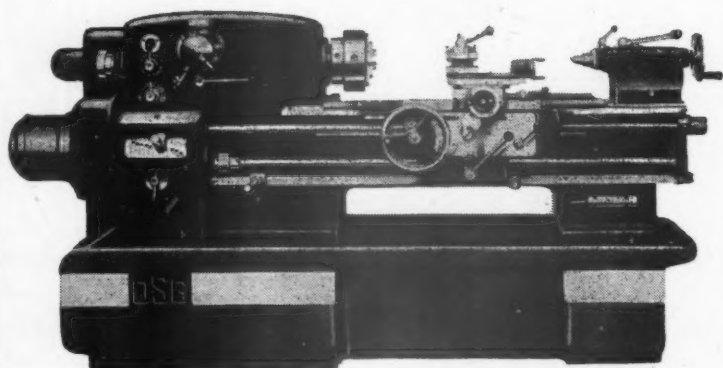
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LIMITED



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13" Swing Precision Lathe.  
Flanged Vee Belt Drive.  
Self-Adjusting Clutch.  
Middle Bearing to Spindle.  
Final Drive to Spindle by Vee Belts.  
Patent "Fastlock" Spindle Nose.  
Wide Range of Spindle Speeds, and  
Threads.

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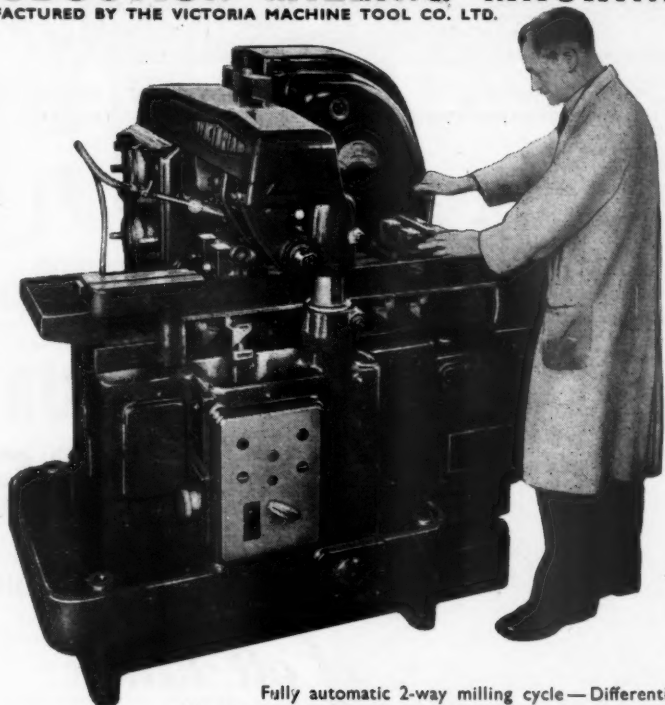


ENGLAND

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MANUFACTURED BY THE VICTORIA MACHINE TOOL CO. LTD.



Fitting of the backlash eliminator (extra equipment) makes this an ideal machine for climb milling.

Fully automatic 2-way milling cycle—Differential table drive eliminates clutches and mechanical interlocks—Final Spindle drive through single helical gears—push-button operated for short runs—Extra large ammeter shows power consumption rise and need to regrind cutters—Independent motors. With the exceptional sturdiness of overarm with its re-inforcing tubular column this machine is second-to-none for speed and accuracy.

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Working surface of table	50" x 10"
Table travel	26"
Spindle Speeds (20)	30—1100 r.p.m.
Spindle Motor	8 h.p.
Table feeds (24)	1—40 in/min
Quick traverse	200 in/min

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# IN THE LIGHT OF PROGRESS

# H.M.E.

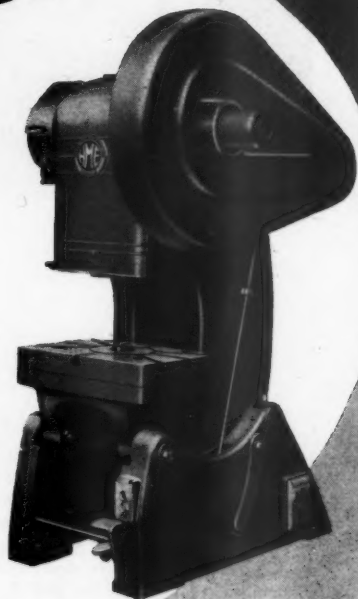
## INTRODUCE

### *The* **NEW L20**

OPEN FRONT POWER PRESS  
GEARED OR UNGEARED  
FIXED OR VARIABLE STROKE  
20 TONS CAPACITY

This machine has been completely re-designed, and among its many new features, the following are worthy of notice.

Being totally enclosed it combines additional safety with a very neat appearance, and the material specification, close tolerances and workmanship, result in a finished standard only found in high class machine tools. This press is inclinable, the inclining gear being concealed in the right hand leg. The slide face never enters the guides on any stroke, and the sensitive ratchet slide adjustment ensures fine punch setting without effort. Main working parts are easily accessible and protected by a hinged cover which, when opened, breaks the electric circuit thus preventing the press from being started under any conditions. Electrical equipment is built in the machine, and the Tee Slots in the bed plate are accurately machined, therefore obviating any possibility of deflection when the dies are bolted down.

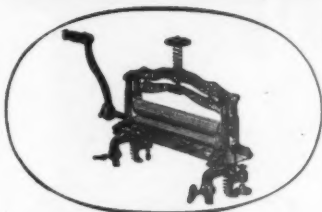
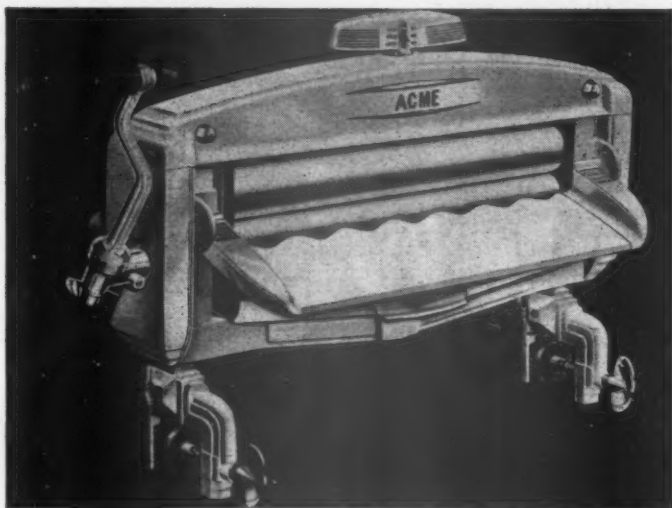


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## ZINC ALLOY DIE CASTING makes all the difference!

No one can doubt that the modern wringer shown above is streets ahead of the old model recalled in the small sketch. Through the sensible adoption of zinc alloy die castings it is easier to work, pleasanter to the eye, and more economical to produce. Zinc alloy die castings are used for the handle, clamps, pressure gauge, mangling board sides and brackets, and also for various nuts and internal fittings.

Compared with cast iron, zinc alloy die casting gives more latitude to the designer, eliminates rusting and provides a choice of more attractive finishes, either by electroplating or enamelling.

### Some facts about zinc alloy die casting.

Speed of production is an outstanding feature of the die casting process—the shortest distance between raw material and finished product. Zinc alloys are the most widely used of all metals for die casting because they yield castings with the following qualities:

**ACCURACY:** Castings can be made practically to finished dimensions and need little or no machining.

**STRENGTH:** Good mechanical properties for stressed components.

**STABILITY:** Close tolerances are maintained throughout the life of the casting.

### British Standard 1004.

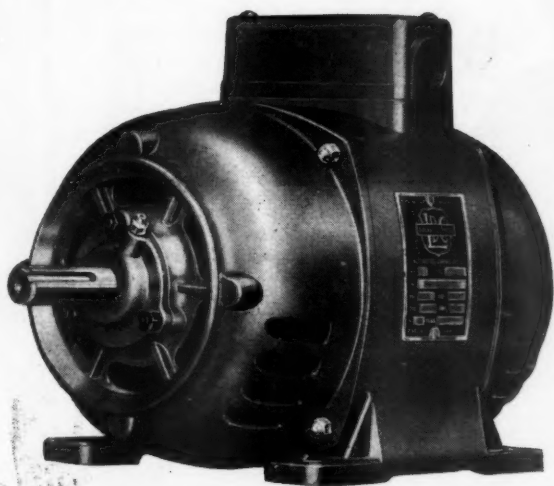
It is essential that alloys conforming to B.S. 1004 should be specified for all applications.

*The Association welcomes inquiries about the use of zinc alloy die castings. Publications and a list of Members are available on request.*

**ZADCA**

**ZINC ALLOY DIE CASTERS ASSOCIATION**  
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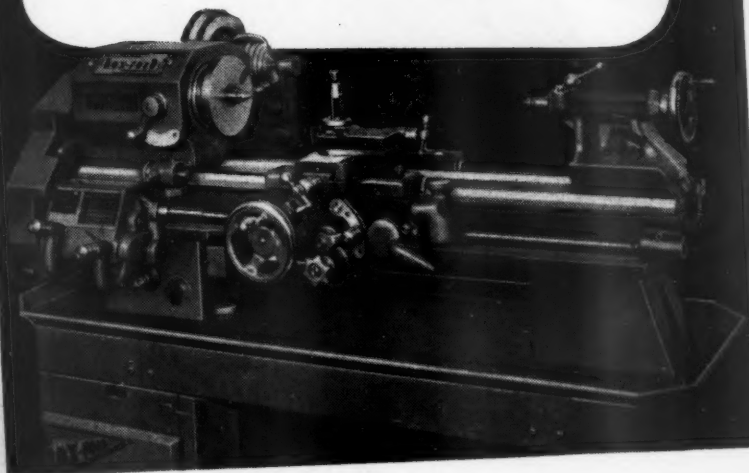
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Number of speeds 16 — 40 to 1300 r.p.m.

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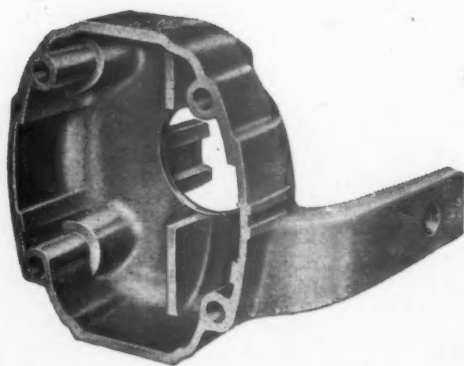
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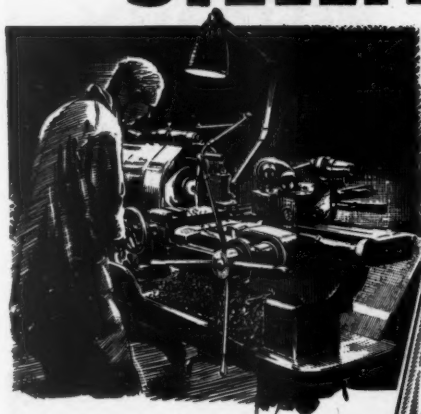
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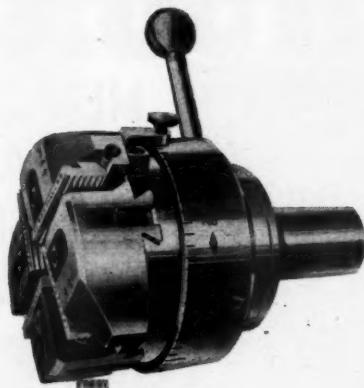
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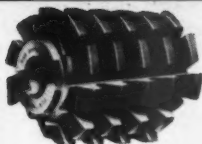
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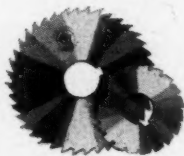
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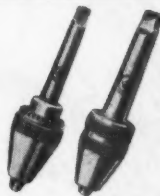
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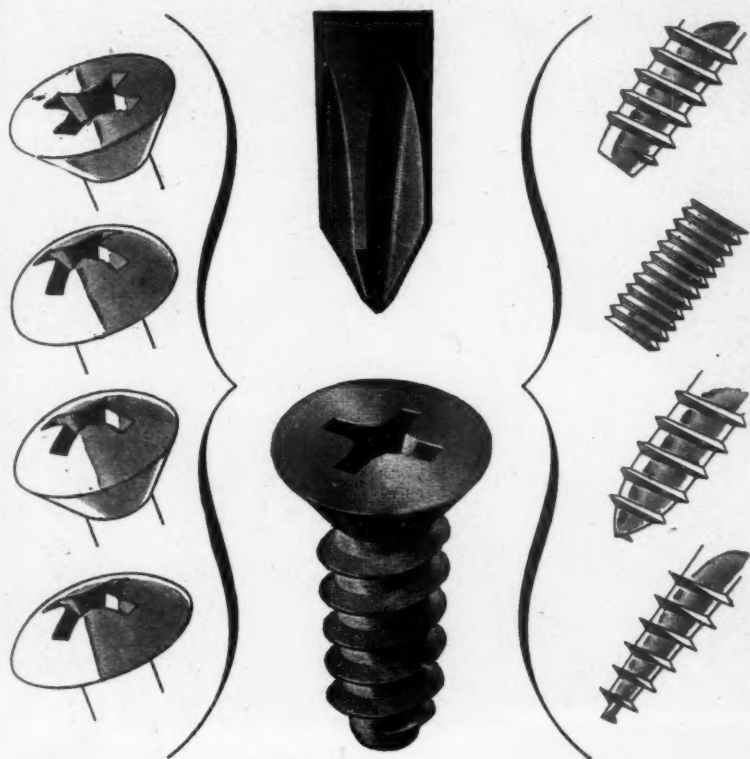
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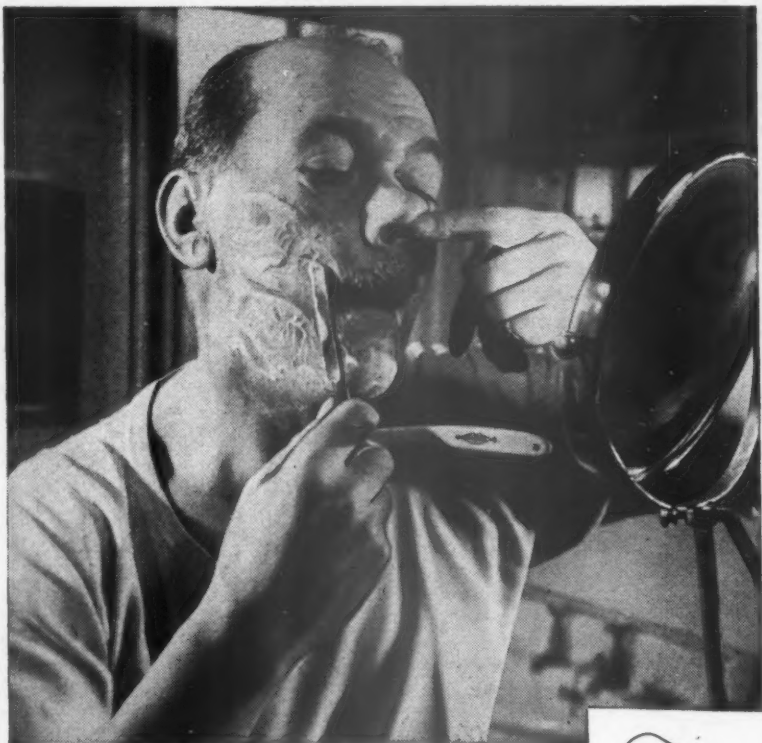
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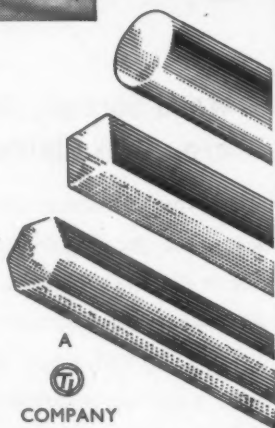
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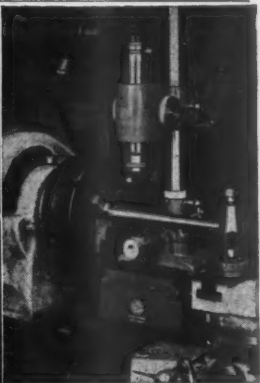
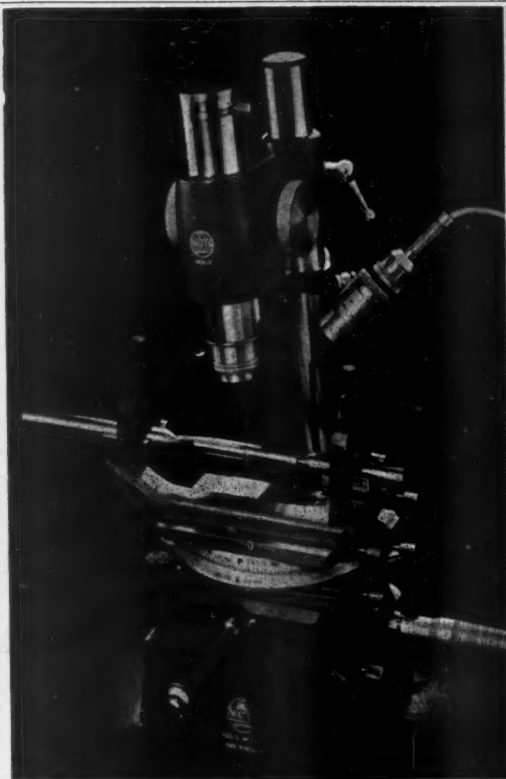
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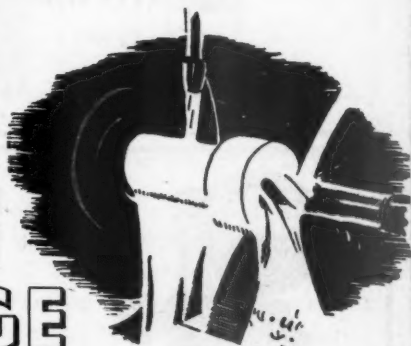


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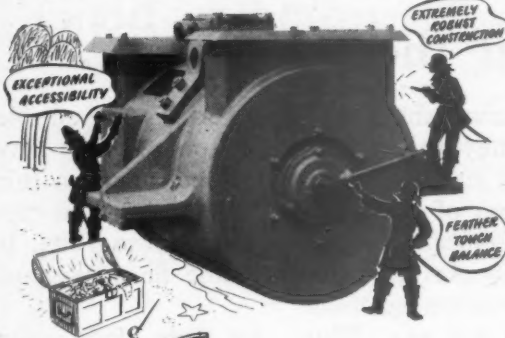
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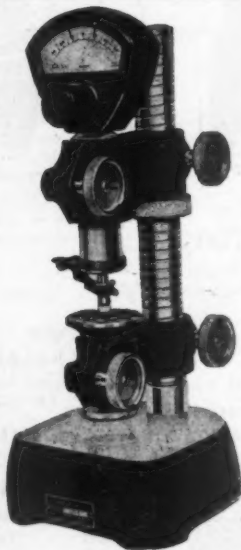
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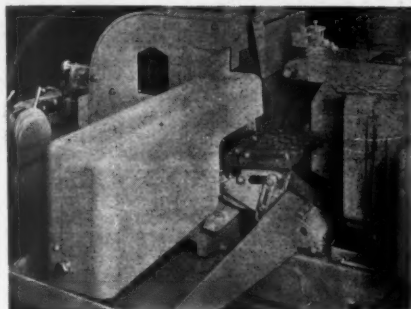
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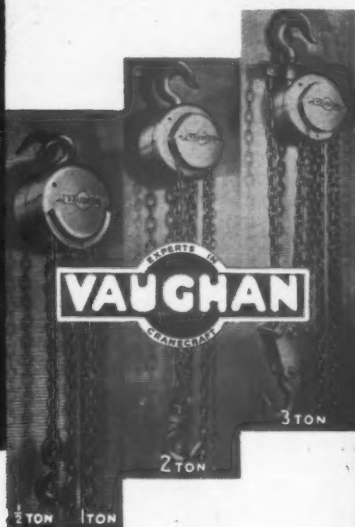
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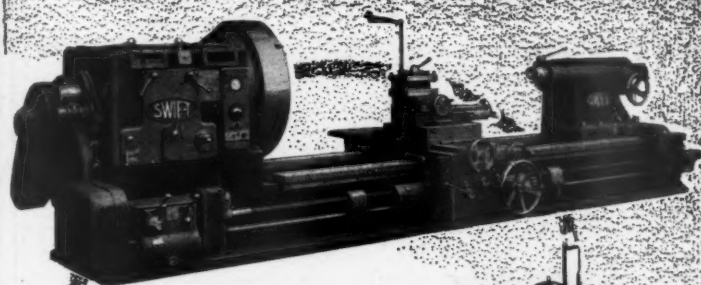
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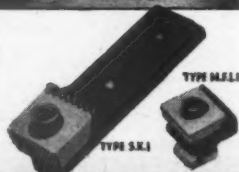
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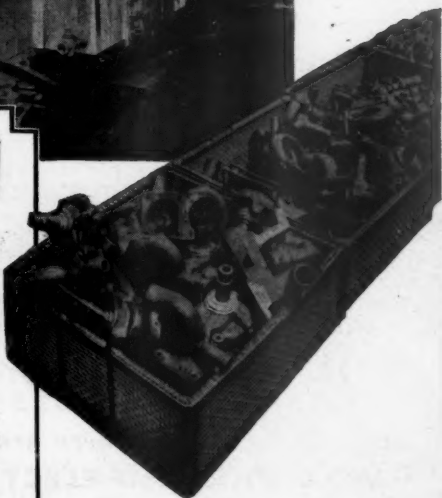


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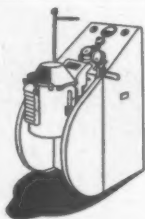
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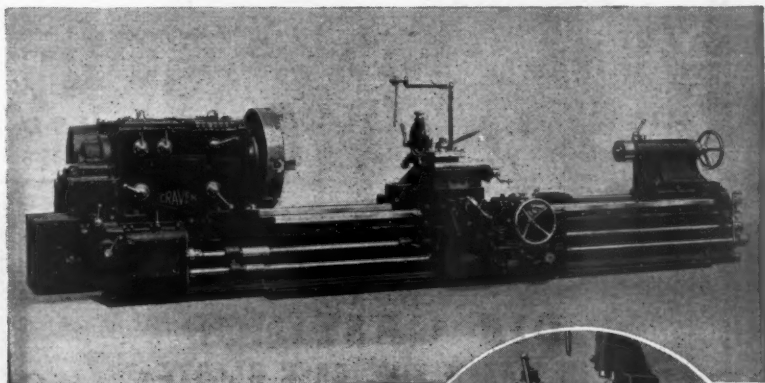
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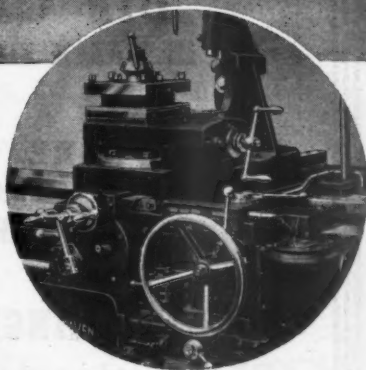
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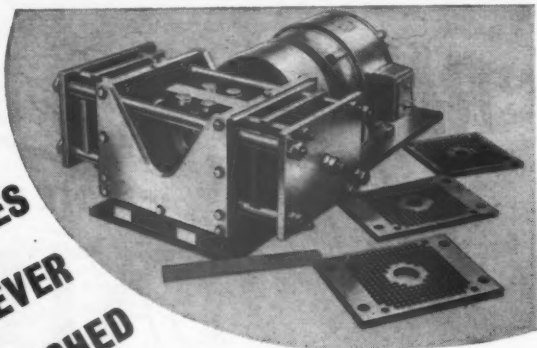
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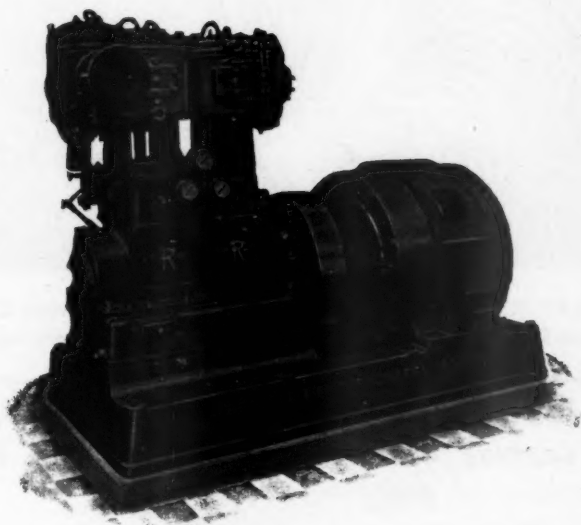
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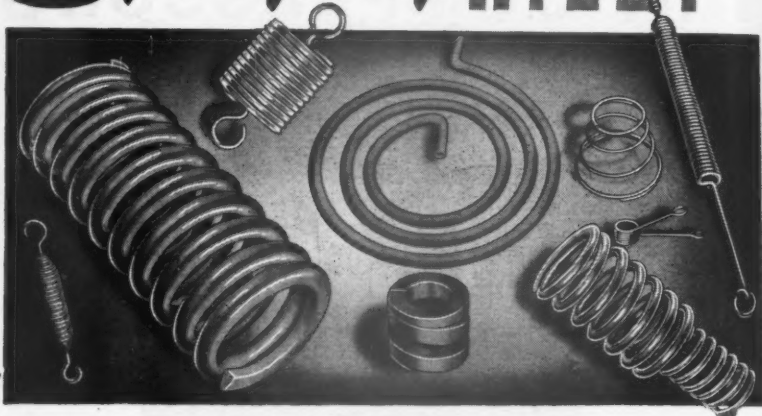
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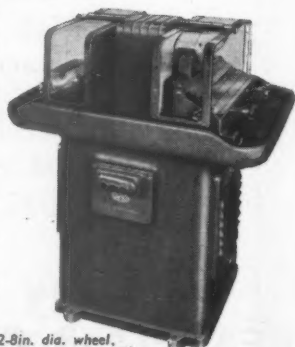
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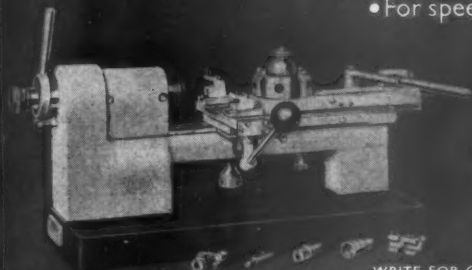
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# “ARCHER” TAPPING ATTACHMENTS

ASK FOR LIST NO. 105

## “ARCHER” FRICTION DRIVE TAPPING CHUCK



Fitted with specially designed DUPLEX Tap Chuck.

Top Jaws for positive drive on Tap Squares.

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Will work in Horizontal or Vertical position.  
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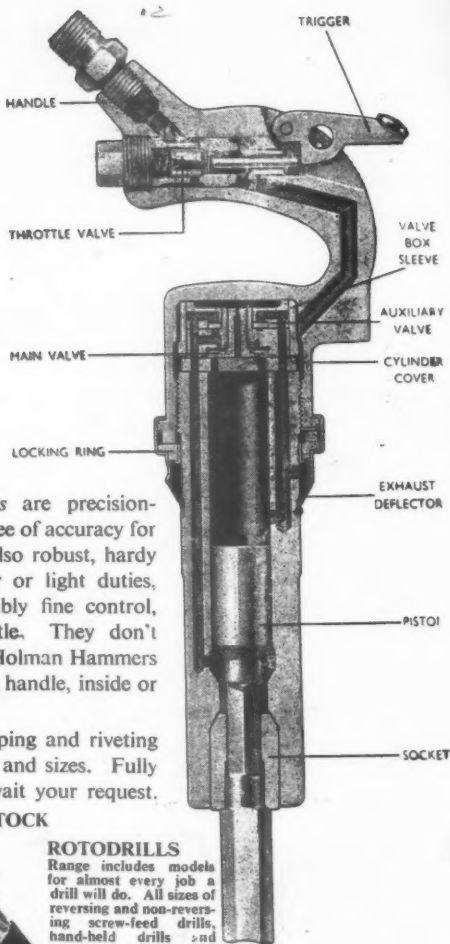
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